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AIR MOVEMENT PLANNING SYSTEM (AMPS). VOLUME II. USERS GUIDE.(U)

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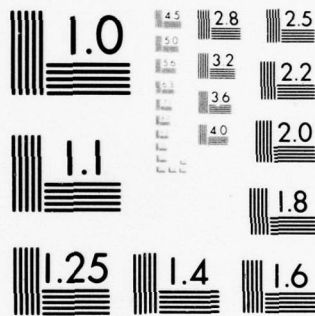
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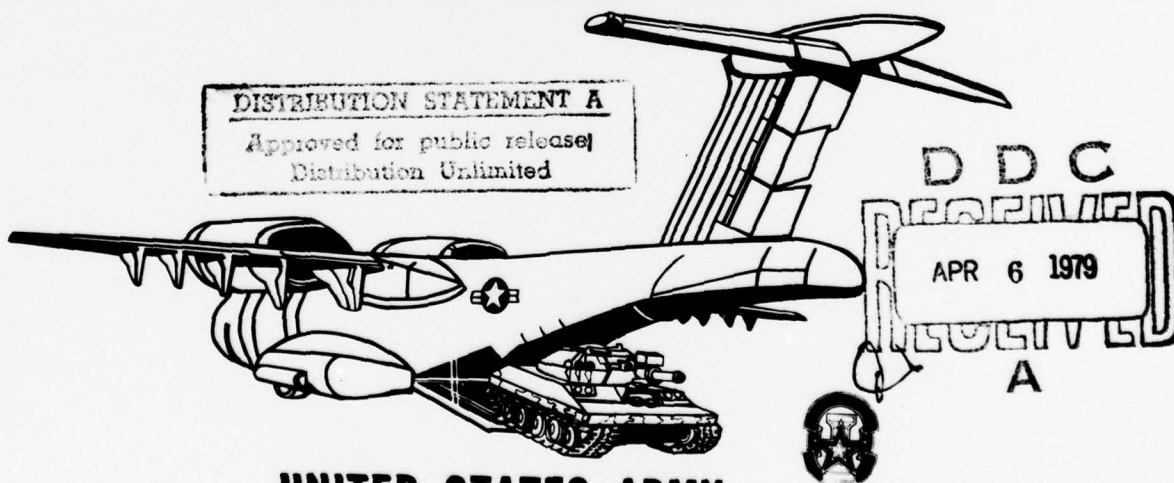
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**VOLUME II - USERS GUIDE**

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## FORWARD

### AIR MOVEMENT PLANNING SYSTEM (AMPS) VOLUME II - FUNCTIONAL USER DOCUMENTATION

Users of this volume are encouraged to recommend changes and submit comments for its improvement. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons will be provided for each comment to insure understanding and complete evaluation. Comments should be prepared using DA Form 2028 (Recommended Changes to Publications) and forwarded direct to the Commander, US Army Logistics Center, ATTN: ATCL-OS, Fort Lee, Virginia 23801.

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## CHAPTER 1

### GENERAL SYSTEM INFORMATION

#### 1-1. PURPOSE AND SCOPE.

a. This volume presents instructions to be followed in preparation of data for AMPS processing; in analysis, distribution and use of AMPS products; in maintenance of AMPS files; and in initiation of changes to functional performance of AMPS.

b. Instructions in this volume are applicable to users, to AMPS Program Managers of installations or agencies, and to data processing activities that operate AMPS.

1-2. DESCRIPTION OF SYSTEM. AMPS provides an automated method for preparing aircraft loading plans and manifests for use in connection with planned, actual or simulated movements of Army units in US Air Force aircraft. It is designed for decentralized operation at corps, division, or installation, to provide responses tailored to studies or to specific unit movement requirements.

#### a. Programs.

(1) AMPS-VAL. The Input Validation Program (AMPS-VAL) edits input data, provides listings of diagnostics and of the validated master file, and builds a master file for use by AMPS-LOAD. AMPS-VAL may be used alone; however, when used in conjunction with AMPS-LOAD, it must precede AMPS-LOAD.

(2) AMPS-LOAD. The Load Planning and Manifesting Program (AMPS-LOAD), using the master file of cargo and aircraft data prepared by AMPS-VAL, plans aircraft loads and provides printouts of the detailed load diagram, cargo manifest, and passenger manifest for each load.

(3) HELI-MAINT. The Helicopter Standard Load File Maintenance Program (HELI-MAINT) is a utility program used to update the Helicopter Standard Load File (HELI-FILE) which is used by AMPS-LOAD to control the loading of Army rotary-wing aircraft into USAF transport aircraft.

#### b. Input.

(1) AMPS-VAL, used either alone or in conjunction with AMPS-LOAD, requires data describing, in the detail appropriate to the processing contemplated, the personnel and cargo of the transported unit and the aircraft (actual or simulated) available for transport. Any options selected by the user, or other control data input, should accompany the unit and aircraft data. Chapter 2 provides detailed instructions for preparation of input data for AMPS-VAL.

(2) Input to AMPS-LOAD consists of master files built by AMPS-VAL and the HELI-FILE. The user prepares no separate input for AMPS-LOAD.

(3) AMPS Program Managers, in coordination with Military Airlift Command, develop input data for HELI-MAINT, in accordance with instructions in Chapter 3. The functional user will not normally prepare any input to HELI-MAINT, but may, however, develop new loads and request they be added to the HELI-FILE, in accordance with instructions in paragraph 1-5 below.

c. Output. Chapter 4 provides guidance on analysis and use of AMPS products.

(1) AMPS-VAL output includes a printout of the errors detected by the system and either a printout or card deck, or both, of the validated master file. This output is provided whether AMPS-VAL is processed alone or in conjunction with AMPS-LOAD.

(2) AMPS-LOAD output includes a detailed diagram of each load of cargo, and a cargo and/or passenger manifest, as appropriate. Statistics, printed at the beginning and at the end of the group of loads for each unit, provide a visible audit and a basis for evaluating loading efficiency.

(3) HELI-MAINT prints a register of all updating transactions and a complete copy of the updated HELI-FILE.

d. Options. AMPS-VAL/AMPS-LOAD in combination provide a variety of options designed to enable the user to obtain products engineered to the specifics of each study or operation. All options are controlled by user input, and they are described in Section II, Chapter 2. HELI-MAINT includes no options.

(1) Users can control system output by one of five options.

(a) With no optional input, AMPS prints a listing of the master file and one copy of each diagram and manifest, using 55 lines per page.

(b) With optional input, the user can obtain a card deck of the master file, increase the number of copies up to nine, change the lines per page to any number from 40 to 60, or can suppress the printing of the master file or load diagrams.

(2) Seven other options enable users to control processing routines.

(a) Without optional input, AMPS processes units in the alphabetic sequence of UIDs, and may mix cargo items and passengers of one unit with those of another unit, as required to obtain efficient loads. Unit



stated priorities are considered in determining sequence of delivery of individual cargo items and passengers. Items identified as related (e.g., truck and trailer) are loaded in the same aircraft, towed items are "telescoped" under their prime movers, and identified drivers are placed in the same aircraft as their vehicles. Using standard parameters, AMPS loads aircraft of the types, and in the sequence, indicated by input.

(b) By optional input, users may establish the sequence in which units are to be loaded, and may combine some units into packages for loading efficiency while maintaining absolute integrity of other units. Even though input data may include unit-assigned priorities for delivery of individual cargo items and passengers, and identification of related passengers and cargo items, users may opt for loading without considering such relationships; or, when considered, without "telescoping" trailers under trucks. Instead of preparing aircraft input data, a user may direct AMPS to "generate" aircraft in a ratio mix he selects, and may vary the aircraft type description by changing the standard parameters.

(3) Several elements of input data, and some entire input types, are discretionary, providing more user options.

(a) A title is printed on each page if the user specifies one; if he does not, AMPS writes "NO TITLE" in the space. Aircraft data input is not required if the "generate" option is selected.

(b) For initial planning purposes, users may accomplish load planning without preparing detailed passenger data; only one card is required to enter up to 999 passenger records.

(c) Users may apply priorities and bumper numbers (equipment links) selectively, or not at all.

e. Due Dates. AMPS is designed for use as required; therefore, due dates for data preparation or output delivery are those imposed by the command or agency directing the movement or conducting the study.

1-3. PRIVACY. Personnel records obtained and processed by AMPS do not constitute a "system of records" as defined in AR 340-21.

#### 1-4. EXPLANATION OF TERMS.

a. Allowable (Cargo)(Cabin) Load (ACL). As used in AMPS, the maximum weight of passengers, equipment and supplies the Army unit can load into the aircraft. ACL is expressed in pounds.

b. AMPS-LOAD. The AMPS program that computes aircraft loads and prints a diagram and manifest of each load, using output from AMPS-VAL as input.

c. AMPS-VAL. The AMPS program that edits and validates user-prepared input data on aircraft, cargo, and passengers, producing a master file for input to AMPS-LOAD and a print of diagnostics for use by users in correcting input.

d. Center of Balance (CB). A line perpendicular to the longitudinal center of a cargo item, on which the item will balance. As used in AMPS, it is usually referred to as the "center of gravity" or "CG", and it is expressed in inches aft of the front of the cargo item.

e. Center of Gravity (CG). As used in AMPS, this means "center of balance", as defined in d above, where reference is made to a cargo item. For use of "CG" with respect to the total aircraft load, see definitions for "Desired CG" and "Planning CG" below.

f. Center of Gravity Fuselage Station (CGFS). The aircraft fuselage station at which the cargo item CG is located.

g. Computerized Movement Planning and Status System (COMPASS). A FORSCOM system for obtaining, filing and reporting unit movement data. (See FORSCOM Reg 55-1).

h. Desired CG. As used in AMPS, indicates the optimum center of balance of the entire load in the aircraft cargo compartment. This is expressed as the fuselage station at which load center of gravity should be located.

i. Equipment Link. A vehicle bumper number or other administrative identification used to "mate" two related cargo items (e.g., truck and trailer) and/or to identify personnel who must be loaded into the same aircraft as a cargo item with the identical equipment link.

j. First Loadable Station. The most forward point in a (specific) (type of) aircraft to which cargo may be located. Expressed as a fuselage station.

k. Forward Fuselage Station. The most forward point in the aircraft to which a cargo item extends.

l. Fuselage Station. A transverse line in an aircraft, the value of which is the number of inches the line is aft of a reference point at or near the front of the aircraft.

m. HELI-FILE. An AMPS file of standard aircraft loads or partial loads of helicopters.

n. HELI-MAINT. An AMPS program used to update HELI-FILE.

o. Last Loadable Station. The point in a (specific) (type of) aircraft aft of which no cargo may be loaded. Expressed as a fuselage station.

p. Pax. Abbreviation for passenger(s).

q. Priority. Unit designation of desired sequence of delivery of cargo items or passengers. May also indicate task force or supported commander's designation of the sequence in which units are to arrive in the objective area.

r. Telescope. To reduce the combined length of a vehicle and its trailer by uncoupling the trailer and placing the lunette as far forward as possible under the towing vehicle.

s. Trailer Overlap. The number of inches the combined length of vehicle and trailer can be reduced by telescoping.

t. Unit Identification (UID). Primary index for sorting cargo and passengers in AMPS. May be Unit Identification Code, Troop List Number Line, or other identification prescribed by task force, exercise, or major commanders. For studies UID may consist of any alpha-numeric group of not more than seven (7) characters used to identify a movement package.

#### 1-5. REQUESTS FOR CHANGES AND UPDATES.

a. The AMPS Program Manager at each installation or agency is responsible for all program changes and file updates.

b. Users having requirements for new or modified output formats or for additional data should submit requests, with full justification therefor, to the Program Manager.

c. Users requiring update of the HELI-FILE to delete an obsolete load should submit their requests to the Program Manager, identifying the load by number and providing the reason for requesting its deletion. To modify an existing load or add a new load, users should:

(1) Design the new or modified load in coordination with their supporting Military Airlift Command representative.

(2) Submit request to the Program Manager, including a diagram of the load and all data required for input data, as described in Chapter 3 below.



## CHAPTER 2

### PREPARATION OF INPUT TO AMPS-VAL

#### Section I. GENERAL

2-1. RESPONSIBILITIES. Responsibilities for input preparation will be assigned in accordance with policies established by major commands. The following outlines the recommended assignment of responsibilities in operational use of AMPS, and the recommended simulation in studies:

a. Control Data (Options, Title, Aircraft Parameters, and Unit Sequence/Combination). Responsibility of the major command or, in the case of an exercise or contingency operation, of the exercise director or task force commander. This retains at the appropriate level the control necessary to obtain standardized products, engineered to the specific operation.

b. Aircraft Data. Responsibility of the major commander, exercise director, or task force commander, who will derive the data from information obtained from the Air Force.

c. Cargo and Passenger Data. Responsibility of the Army unit.

d. Job Control Data. Responsibility of the requester, in accordance with instructions from the supporting data processing facility.

2-2. CLASSIFICATION. AMPS includes no provision for input to generate printing of any security classification on the output. Therefore, if input data requires security classification, it is the responsibility of the user to so advise the data processing facility, and to request use of paper preprinted with the appropriate classification.

#### 2-3. PREPARING WORKSHEETS.

a. Accuracy. The degree of accuracy and completeness of input data determines the degree of usefulness of the output. Users should exercise extreme care in preparation of that data.

b. Quantity of Data. Data for as many as 99 units may be processed in one job. There is no limitation on the number of cargo items or number of personnel that may be included in one unit.

## Section II. CONTROL DATA

### 2-4. OPTIONS.

a. General. To enable users to obtain products tailored to each movement situation, AMPS offers alternative use or non-use of eight processing controls and variable use of two printing controls. Subsequent subparagraphs describe the default condition of each of these controls and its effect if no action is taken by the user, then describe the effect of the alternate condition and the action the user must take to obtain the alternate. All instructions refer to use of Form AMPS-1, Part A - OPTIONS (Fig 2-1). Blank keypunch worksheets may be used by following instructions below for required entries and:

- (1) Leaving columns 31-75 blank.
- (2) Entering "10001" in columns 76-80.

#### CAUTION

Make only the entries required to change the default options. Leave all other fields blank.

b. Data Entries. The following subparagraphs are keyed to circled reference numbers on Fig 2-1, Part A, and they provide instructions for data entries in the fields indicated by those reference numbers.

- (1) Listing of Validated Input.

(a) AMPS-VAL performs a limited edit of input data which corrects some errors and prints "Diagnostics" that flag rejected records and point out errors detected. Many types of errors cannot be detected by the edit; therefore, this program prints a listing of validated input, the cargo data, reflecting the deletion of rejected records and the changes to other records by the validation routine. Unit review of this listing and the "Diagnostics" provides the basis for preparation of new cards to correct errors and replace rejected records.

(b) Once a print is obtained that has no "Diagnostics" and that is satisfactory to the unit, production time and output volume can be reduced by suppressing the printing of this list when processing AMPS-VAL together with AMPS-LOAD. This is accomplished by entering an "X" in column 2. When processing only AMPS-VAL, make no entry in column 2.

SEE CHAPTER 2, USER MANUAL, FOR DETAILED INSTRUCTIONS

AIR MOVEMENT PLANNING SYSTEM

FORM AMP-5-1 (TEST)

SEE REVERSE SIDE OF FORM FOR SPECIAL INSTRUCTIONS

PART A-OPTIONS

1	2	3	4	5	6	7	8	9	10
NO LIST	CALC DECK	NO DIAG	NO TEL	NO SCOPE	NO PRIO	UNIT INTEG	GENE- RATE	NO COR	LINE COUNT
1 2 3	4 5 6 7 8	9 10 11 12 13 14 15	16 17 18	19 20 21	22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

LEAVE BLANK

PART B - TITLE

ENTER DESIRED TITLE, BEGINNING IN COLUMN 1. LEAVE COLUMNS 73-75 BLANK. LEAVE UNDESIRABLE BLANK.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

SEE CHAPTER 3, USER MANUAL, FOR DETAILED INSTRUCTIONS

DO NOT:

- ENTER "0" IN PROGRESSING SEQUENCE DESIRED.
- SEPARATE UIDS WITH A COMMA (,).
- COMBINE UIDS WITH A PLUS (+).

PART C - UNIT SEQUENCE/COMBINATIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

SEE CHAPTER 3, USER MANUAL, FOR DETAILED INSTRUCTIONS

NEED REQUIRED IN COL 1-3 WHEN GENERATE OPTION SELECTED IN PART A. ABOVE

SEE CH 3, USER MANUAL

PART D - AIRCRAFT PARAMETERS

MAKE ENTRIES IN COLUMNS 10-25 AND 41-43 ONLY AS DIRECTED ON APPROVED BY MILITARY AIRLIFT COMMAND.

2 SEE CHAPTER 2, USER MANUAL.

1

PLANNING		LOAD		MAX PAY		PAX		UT		LEAVE BLANK		PAX		UT		LEAVE BLANK																																																															
RATIO	ACT	ACT	CGS	ACT	CGS	ACT	CGS	ACT	CGS	ACT	CGS	ACT	CGS	ACT	CGS	ACT	CGS																																																														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

JOB NO

DATE

PUNCHED BY

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NO OF COPIES

Fig 2-1. Control Data Input Format.



#### CAUTION

User should suppress printing of the master file only when assured that integrity of the input card deck will be maintained until processing is completed.

(2) Validated Input Card Deck. To obtain a card deck of validated input, place an "X" in column 5.

(NOTE: Use of this option substantially extends the production time for AMPS-VAL.)

(3) Bypass Balance and Diagram Routines.

(a) AMPS-LOAD computes precise locations for cargo items to assure a balanced load and provides a diagram of the load.

(b) When AMPS is used in early planning, or for generating study data, such requirements may be satisfied without individual load diagrams or balancing. If so, both output volume and production time can be substantially reduced by bypassing these routines. Enter an "X" in column 8 to accomplish this bypass.

(4) Do Not Mate Vehicles With Trailers/Crew.

(a) By matching "Equipment Link" (bumper number) entries, AMPS insures that towed items and drivers are loaded into the same aircraft as the prime mover.

(b) To prevent such matching, enter an "X" in column 11.

#### CAUTION

If an "X" is entered in column 11, an "X" must be entered in column 14 (see following subparagraph).

(5) Do Not "Telescope" Trailers Under Prime Movers.

(a) AMPS assumes priority is given to making maximum use of floor space, at the expense of slower offload, and towed items are "telescoped" under matched prime movers.

(b) To prevent telescoping and enable rapid offload of vehicles at destination, especially desirable when prevention of airfield saturation or conservation of aircraft crew time is a primary consideration, place an "X" in column 14 and insure that column 11 is blank. AMPS will then assume a lunette-to-pintle hookup of towed items with their matched prime movers.



(c) In either condition of this option, semitrailers are assumed to be locked to the fifth wheel of matched truck-tractors.

(6) Override Unit Priorities.

(a) Within each unit, AMPS sorts cargo items in accordance with unit-established priorities and, to the extent consistent with efficient loading, follows those priorities in load planning.

(b) In the interest of conserving aircraft space, it may be desirable for the program to plan loads without considering item priorities. If so, enter an "X" in column 17.

(7) Unit Integrity.

(a) When AMPS processing exhausts all cargo in a unit without filling the aircraft being loaded, cargo from the next unit in sequence will be added to that aircraft. Similar logic is followed for passengers.

(b) When it is necessary that unit integrity be absolute, with no mixing of cargo items or passengers of one unit with those of another, enter an "X" in column 20.

(8) Generate Aircraft.

(a) AMPS expects Aircraft Data Input (see Section III, this chapter), describing each aircraft and indicating its scheduled sequence of arrival at the onload base.

(b) When the aircraft schedule is not known, AMPS will generate aircraft as required for loading all passengers and cargo. To effect such data generation, enter an "X" in column 23, and make appropriate entries in the "Ratio Mix" field of the "Aircraft Parameters" portion (Part D) of Form AMPS-1, in accordance with instructions in paragraph 2-7, below.

(9) Number of Copies.

(a) AMPS prints each diagram and manifest once only, and the number of copies produced depends on the type print paper used (1- to 6-part).

(b) For some movements, more than six copies of the manifests may be required. Also, some commands may direct that no more than three carbons (4-part paper) be used. AMPS can print each manifest and diagram the number of times required to produce the desired copies.

Enter the "number of times" (from 2 to 9) in column 26. EXAMPLE: If 4-part (original and three carbons) paper is used, and 11 copies of each manifest are required, enter "3" in column 26 which will produce 12 copies.

(NOTE: Production of multiple copies significantly extends AMPS run time.)

(10) Line Count.

(a) AMPS prints 55 lines per page.

(b) To change the number of print lines, enter the desired number (from 40 to 60, only) in columns 29-30.

2-5. TITLE.

a. AMPS will print in the heading of each page the title designated by the user.

b. Using Form AMPS-1, Part B - TITLE, enter the title desired, beginning in column 1 and extending as required through column 72. Leave unused columns blank. If a blank keypunch worksheet is used:

(1) Leave columns 73-75 blank.

(2) Enter "20001" in columns 76-80.

2-6. UNIT SEQUENCE/COMBINATIONS.

a. AMPS assumes that the alphabetic sequence of UID is the desired sequence of processing.

b. Users can designate the sequence in which units are to be processed by listing the units' identification (UID in the unit input data) in the desired sequence, on Form AMPS-1, Part C - Unit Sequence/Combinations. If a blank keypunch worksheet is used, follow the instructions below; then enter a "3" in column 76 of each line used, and in columns 77-80, enter a number from 0001 to 0011, indicating the desired sequence of those lines.

(1) Begin in column 1 of each line used.

(2) Separate UIDs with a comma. DO NOT leave blanks between UIDs.

(3) DO NOT continue a UID from one line to another.

(4) DO NOT list more than 99 UIDs.

(5) It is not necessary to list in this format all the units in the input. When only part are listed, those will be processed first in the sequence indicated. Remaining units will then be processed in alphabetic sequence of UID.

c. Within the designated sequence, units can be selectively combined for processing as a package when desired to increase efficiency of loading.

(1) UID of units to be combined are separated by a plus (+) instead of a comma, with a comma following the last unit of the package.

EXAMPLE: To combine units with UIDs WB9CAA, W4GBAA, and WDCKAA into a package which follows UID WABKAA, and which precedes WBDBAA, the entry would be:

W A B K A A , W B 9 C A A + W 4 G B A A + W D C K A A , W B D A A ,

(2) When units are combined, the individual unit identification of each passenger and cargo item is maintained.

(3) More than one package of units may be designated.

(4) When the "Integrity" option is selected, the integrity of each package is maintained, but not the integrity of units within the package. The integrity of units not in packages will be maintained.

## 2-7. AIRCRAFT PARAMETERS.

a. General. Form AMPS-1, Part D - AIRCRAFT PARAMETERS, serves two purposes. It defines the mix of aircraft types to be considered when the "GENERATE" option has been selected, and it changes standard passenger weight and standard parameters that define characteristics of each type aircraft. It can be used for both purposes at the same time.

b. Data Entries. The following subparagraphs are keyed to circled reference numbers on Fig 2-1, Part D, and they provide instructions for data entries in the fields indicated by those reference numbers.

(1) Ratio Mix. When the GENERATE option has been selected (see paragraph 2-4(b)(8), above), AMPS will generate C-5 aircraft as required for cargo outsize to the C-141 and C-130 and, for all other cargo, will

generate C-141 and C-130 aircraft in the ratio indicated in this field, columns 7-9.

EXAMPLE 1: If "003" is entered in this field for C-141 and "001" for C-130, AMPS will:

Step 1. Plan loads for C-5 aircraft as required to load all outsize cargo in the unit. Other cargo will be added, as appropriate, to completely load the aircraft.

Step 2. Plan loads for three C-141 aircraft.

Step 3. Plan a load for one C-130 aircraft.

Step 4. Repeat steps 2 and 3, above, until all cargo and passengers in the units are loaded.

EXAMPLE 2: If "001" is entered in this field for either C-141 or C-130, and "000" is entered for the other aircraft, AMPS will:

Step 1. Plan loads for C-5 aircraft as required to load all outsize cargo in the unit. Other cargo will be added, as appropriate, to completely load the aircraft.

Step 2. Plan loads for the aircraft type with the "001" entry to load the remaining cargo and passengers in the unit.

EXAMPLE 3: If "000" is entered in this field for both C-141 and C-130, or if both fields are left blank, AMPS will plan loads in C-5 aircraft, only, for all cargo and passengers in the unit.

(2) Standard Parameters.

(a) AMPS programs include the following standard aircraft parameters:

	<u>C-5</u>	<u>C-130</u>	<u>C-141</u>	<u>Pax</u>
Planning ACL	110,000	30,000	50,000	
Planning CG	1,275	530	900	
Max Pax (Pax Only)	-	60	94	
Max Pax (With Cargo)	73	17	17	
Passenger Weight	-	-	-	240



(b) Changes to these standard parameters, using Form AMPS-1, Part D, apply to all aircraft of that type in the processing for which this form is submitted. (To effect a change to parameters for an individual aircraft, see Section III, Aircraft Data.) If a blank keypunch worksheet is used instead of Form AMPS-1, follow instructions in (d) below; enter the aircraft type identification in columns 1-6, using the exact entry for the aircraft type shown in Form AMPS-1, Part D; and enter the pre-printed data shown in Form AMPS-1, Part D, for that aircraft type.

(c) Standard aircraft parameters should be changed only when directed or approved by appropriate representatives of Military Airlift Command.

(d) To change any of these parameters, make entries only in fields to be changed. Leave all other fields blank. Right-justify and zero-fill each field used. Be sure the entry is on the right line for the aircraft.

### Section III. AIRCRAFT DATA

#### 2-8. GENERAL.

a. Source. All aircraft data should be obtained from USAF Military Airlift Command (MAC). Data for preparation of manifests for actual movement should reflect the flow of aircraft scheduled by MAC. Data for studies or plans should be based either on MAC contribution to those studies or plans or on MAC standard planning factors.

#### b. Required Data.

(1) Form AMPS-2 (Fig 2-2) provides for entry of all aircraft data applicable to preparation of manifests; it is not necessary, however, that an entry be made in every field. Only in exceptional instances will any entry be made in columns 42-59, and it is important that, when no entry is requested by MAC for any field in that area, the field be left blank, not zero-filled.

(2) Use of Form AMPS-2 is unnecessary when the "GENERATE" option has been selected (see para 2-4b(8)).

(3) In some planning situations, it may be desirable to simulate an aircraft flow sequence, rather than using the "GENERATE" option, and

[illegible]

Fig 2-2. Aircraft Data Input Format.

this may be accomplished by preparing aircraft data in Form AMPS-2 format, with entries only in the following fields:

- (a) Type/model, columns 1-5.
- (b) Quantity field, if applicable, columns 12-14.
- (c) Card type, column 76.
- (d) Sequence number, columns 77-80.

## 2-9. PREPARATION.

### a. General.

(1) Use Form AMPS-2 (Fig 2-2), if available; otherwise, use blank keypunch worksheets by following guidelines below and by entering data shown as preprinted in Fig 2-2.

(2) Prepare one line for each aircraft, except as noted in subparagraph b(3) below.

b. Data Entries. The following subparagraphs are keyed to circled reference numbers on Fig 2-2, and they provide instructions for data entries in the fields indicated by those reference numbers.

### (1) Type/Model.

(a) Contents. Enter the model number of the aircraft to be described on this line.

(b) Instructions. The only valid entries in this field are:

In these columns: 1 2 3 4 5

Enter either: C - 5

Or: C - 1 3 0

Or: C - 1 4 1

(2) Allowable Cargo Load (ACL).

(a) Contents. An entry is required in this field only when the ACL for this aircraft differs from the planning ACL for this type of aircraft. Standard planning ACL for each aircraft type are shown below; however, if the standard planning ACL for this type aircraft has been changed by an "Aircraft Parameters" card, Form AMPS-1, Part D, the value shown in that change becomes the standard planning ACL and determines whether or not an entry is needed here.

<u>Type Aircraft</u>	<u>Standard Planning ACL</u>
C-5	110000
C-141	50000
C-130	30000

(b) Instructions. Enter the applicable ACL in columns 6-11. If the entry is less than 100000, enter in columns 7-11 and enter a "0" in column 6.

(3) Quantity.

(a) Contents. An entry is required here only to express a quantity (2 or more) of identical aircraft that are to be loaded consecutively.

(b) Instructions. Use all three columns, 12-14. Enter desired number from 002 to 999. To express a quantity of one, leave this field blank.

(4) Departure and Arrival Airfields (columns 15-22).

(a) Contents. Enter the International Civil Aviation Organization (ICAO) code or jointly agreed abbreviation for the origin and destination airfields.

(b) Instructions. Begin entry in column 15 (Departure Airfield) or column 19 (Arrival Airfield) and leave unused columns blank.

(5) Unit Assignment (Columns 23-29). MAC airflow data will frequently indicate assignment of aircraft to specific units. When so indicated, the unit to which assigned should be identified here.



### CAUTION

If any one aircraft is assigned to a unit by an entry in this field, every aircraft in the processing run must also have an entry assigning the aircraft to some unit in the input data.

(a) Contents. Enter the UID of the unit to which the aircraft is assigned.

(b) Instructions. Begin entry in column 23; leave unused columns blank.

(6) Mission Identifier (Columns 30-41).

(a) Contents. Enter mission identifier provided by USAF.

(b) Instructions. Begin entry in column 30; leave unused columns blank. If no data provided by USAF, leave entire field blank.

(7) Aircraft Characteristics.

(a) Columns 42-56 provide for entries defining characteristics applicable to individual aircraft. Make entries in this area ONLY when required by the appropriate agency of Military Airlift Command; in the absence of such a requirement, leave the field blank.

(b) Maximum Passengers, All-Passenger loads. Enter the number of passengers in columns 42-44. If the number is less than 100, enter the number in columns 43-44 and enter "0" in column 42.

(c) Maximum Passengers to Accompany Equipment Loads. Enter the number of passengers in columns 45-47. If the number is less than 100, enter the number in columns 46-47 and enter "0" in column 45.

(d) First Loadable Station. Enter the fuselage station number in columns 48-51. If the number is less than 1000, enter the number in columns 49-51 and enter "0" in column 48.

(e) Last Loadable Station. Enter the fuselage station number in columns 52-55. If the number is less than 1000, enter the number in columns 53-55 and enter "0" in column 52.

(f) Comfort Pallet (C-141 Aircraft Only). If the MAC agency advised that a comfort pallet is installed in the aircraft, enter a "1" in column 56; otherwise, leave column 56 blank.

(8) Air Force Command (Columns 57-59).

(a) Contents. Enter the Air Force Command identifier provided by MAC. If none is provided, leave blank.

(b) Instructions. Begin entry in column 57; leave unused columns blank.

(9) Sequence Number.

(a) Contents. The entry in this field controls the sequence in which the data will be processed, and it should, therefore, reflect the actual or simulated flow of aircraft.

(b) Instructions. Use all four columns, 77-80, and enter numbers "0001" to "9999", as required.

#### Section IV. CARGO DATA

##### 2-10. GENERAL.

a. Use Form AMPS-3 (Fig 2-3), if available; otherwise, use blank key punch worksheets by following guidelines in subparagraph b below, and entering preprinted data as shown in Fig 2-3.

b. Generally, complete one line on the form for each item of cargo. For example, a truck (tractor) and its (semi) trailer, though expected to be transported as a single unit, must be described on separate lines. There are, however, some exceptions:

(1) If several items are packed together into a single container, or on a pallet, prepare only one line for the container or pallet.

(2) Similarly, do not prepare a line on this form for an item carried in a vehicle, but be sure that the line describing the vehicle reflects the additional weight and any changes in dimensions.

(3) When a helicopter is disassembled in preparation for transport, do not prepare a line on this form for any component removed, since those components are expected to be transported either inside or under the helicopter.



2-11. DATA ENTRIES. The following subparagraphs are keyed to circled reference numbers on Fig 2-3, and they provide instructions for data entries in the fields indicated by those reference numbers.

a. Unit Identification. (Ref. No. 1, columns 1-7)

(1) Contents. Normally, enter UIC, unless specifically directed to use a Force Requirement Number, Troop List Line Number, or other unit designator.

(2) Instructions. Begin entry in column 1; leave unused column blank.

b. Description. (Ref. No. 2, columns 11-33)

(1) Contents. Any nomenclature or description useful to the unit may be entered. For convenience in cross-referencing, description may be copied from COMPASS report. However, for convenience in coordination with supporting Air Force personnel, the entry should begin with the "M-number," if there is one, followed by the generic noun. (e.g., "M151A1, TRUCK ---.") This insures that these essential identifiers are available for printing in the rectangle depicting the item on the load diagram.

(2) Instructions. Begin entry in column 11; leave unused spaces blank.

c. Trailer Overlap. (Ref. No. 3, columns 40-42)

(1) Contents. Enter the number of inches of the length of a trailer that can be "telescoped" under the prime mover, or of the length of a semitrailer that overlaps the tractor when they are mated. An entry is recommended when the "cargo code" field on that line (columns 43-44) contains either "TR" or "ST"; leave blank if "cargo code" is anything else.

(2) Instructions. Use all three columns. If entry is 99 or less, place entry in columns 41 and 42, and place a zero in column 40.

d. Cargo Code. (Ref. No. 4, columns 43-44)



(1) Contents.

If the item is:

Enter this code:

Self-propelled wheeled vehicle:

M-151, 1/4-ton

JP

M-561, M-792, or M-800-series

HT

All other SP Whl Veh

PM

Tracked Vehicle

TK

Semitrailer (incl. semitrailer  
mounted equipment)

ST

Trailer (incl. towed artillery,  
trailer mounted equipment)

TR

USAF 463L Pallet

88" x 108"

PA

Any other dimension

BU

Bulk cargo (incl. 40" x 48"

pallet, CONEX, CONEX insert,  
bales, boxes, etc.)

BU

Helicopter:

CH-47 series

CH

UH series

UH

AH-1G

AH

OH-58

05 (not "05")

OH-6

06 (not "06")

(2) Instructions. This field (columns 43-44) must contain one of the above entries for each cargo item.

e. Dimensions. (Ref. No. 5, columns 45-47 (length), 48-50 (width), 51-53 (height))

(1) Contents. Enter the dimensions, in inches, of the cargo item as configured for movement, to include any cargo loaded thereon. If item dimensions in the source document are expressed in inches and tenths of an inch, round to the next higher full inch for entry in this field.

(2) Instructions. Entry is required in each dimension field. If the entry is only 2 digits, precede it with a zero; if only one digit, with 2 zeros.

f. Weight. (Ref. No. 6, columns 54-59)

(1) Contents. Enter the weight, in pounds, of the cargo item as configured for movement, to include the weight of any cargo loaded thereon. Exceptions:

(a) The weight of a trailer, tracked vehicle, or helicopter must include the weight of any shoring required for load spreading, positioning, or floor protection.

(b) The weight of a helicopter must include the weight of any components removed for loading or transport.

(2) Instructions. Use all six columns, 54-59. Place the weight as far to the right of the field as possible and fill the unused columns on the left with zeros.

g. Center of Gravity. (Ref. No. 7, columns 60-62)

(1) Contents. Enter the center of gravity (C/G) (balance point) of the cargo item as prepared and/or loaded for movement. The C/G is to be expressed in inches from the front of the item. See Appendix K, FM 55-12, for criteria and methods of computation. Exceptions (to instructions in Appendix K, FM 55-12):

(a) Instructions in FM 55-12 provide a method for obtaining a vehicle C/G expressed in inches aft of the front axle. To that C/G must be added the inches of length between the front of the vehicle and the front axle.

(b) DO NOT compute a combined C/G for mated vehicles and trailers to be transported either coupled or telescoped. Compute the C/G for each item and enter on the appropriate line of the worksheet. AMPS programs compute a combined C/G when necessary.

(2) Instructions. Use all three columns. If the entry is 99 or less, place a zero in column 60 and enter the number in columns 61 and 62.

h. Priority. (Ref. No. 8, columns 63-65))

(1) Contents. Enter the priority (desired sequence of delivery) assigned to this item by the unit commander. If no priority is assigned, enter 999, or leave blank.

(2) Instructions. Use all three columns, 63-65. Enter any number from 001 (the highest priority) to 999 (the lowest).

i. Equipment Link. (Ref. No. 9, columns 66-71)

(1) Contents. Enter the bumper number, or other identifying administrative number, for use in loading related items (truck and trailer), or crew members with equipment, into the same aircraft.

(a) The equipment link may be any combination of letters and numbers. It may include a dash (-) or a slash (/), but must not include any other special characters (\*, #, \$, etc.).

(b) An equipment link assigned to a helicopter MAY NOT be assigned to any other cargo item.

(c) If an equipment link is inappropriate for this item leave entire field blank.

(NOTE: The program will match items only when the equipment links for those items are identical. DO NOT use a prefix or suffix with a vehicle bumper number to indicate the trailer for that vehicle.)

(2) Instructions. Begin entry in column 66 and leave unused columns on the right blank.

j. Quantity. (Ref. No. 10, columns 72-74)

(1) Contents. Enter the number of items with identical description and characteristics. However, if there is an entry in equipment link (columns 66-71), either leave this field blank or enter "001."

(2) Instructions. Using all three columns, 72-74, enter quantities from 001 to 999.

k. Special Problem. (Ref. No. 11, column 75)

(1) Contents. An entry is required in this column when it is desired that the program print a note to the AF loadmaster stating that special procedures or precautions are necessary in loading this item onto an aircraft, in tiedown, or in unloading.

(2) Instructions. Enter "X" in column 75 only if it is KNOWN that the item presents a problem in loading, unloading, or tiedown; otherwise, leave blank.

## Section V. PASSENGER DATA

### 2-12. GENERAL.

a. Use Form AMPS-4 (fig 2-4), if available; otherwise, use blank key punch worksheets by following guidelines in subparagraph b, below, and entering preprinted data as shown in Fig 2-4.

b. Form AMPS-4 may be used in two ways:

(1) To prepare individual personnel records from which AMPS will prepare passenger manifests. For this purpose, make entries in accordance with instructions in paragraph 2-13 a through g below, preparing one line for each passenger.

(2) To prepare records that will provide only the number of passengers to accompany the unit. For this purpose, make entries in accordance with instructions in paragraph 2-13 h, below.

2-13. DATA ENTRIES. The following subparagraphs are keyed to circled reference numbers on Fig 2-4, and they provide instructions for data entries in the fields indicated by those reference numbers.

a. Unit Identification. (Ref. No. 1, columns 1-7)

(1) Contents. Enter UIC, unless specifically directed to use a Force Requirement Number, Troop List Line Number, or other unit designator.

(2) Instructions. Begin entry in column 1; leave unused columns blank.

b. Rank. (Ref. No. 2, columns 8-10)

(1) Contents. Enter abbreviation for rank.

(2) Instructions. Begin entry in column 8; leave unused columns blank.

c. Name. (Ref. No. 3, columns 11-33)

(1) Contents. Enter individual's name in the format prescribed by applicable directives on manifest preparation.

(2) Instructions. Begin entry in column 11; leave unused columns blank.





d. Social Security Account Number (SSAN). (Ref. No. 4, columns 34-42)

(1) Contents. Enter individual's SSAN.

(2) Instructions. Enter 9 digits of SSAN only (no dashes).

e. Weight. (Ref. No. 5, columns 57-59)

(1) Contents. Leave this field blank unless specifically directed otherwise.

(2) Instructions. If used, fill all three columns, 57-59. If weight entry is directed, and weight is 99 or less, place a zero in column 57.

f. Priority. (Ref. No. 6, columns 63-65)

(1) Contents. Enter the priority (sequence of arrival) assigned to this individual by the unit commander.

(2) Instructions. Use all three columns, 63-65, to enter any number from 001 (the highest priority) to 999 (the lowest). If no priority assigned, enter "999" or leave blank.

g. Equipment Link. (Ref. No. 7, columns 66-71)

(1) Contents. Enter the bumper (or administrative) number of the item to which this individual is assigned. The number must be identical to the entry in this field for the item of cargo. NOTE: Insure that two individuals are assigned (by entries in this field) for each self-propelled vehicle and each helicopter. Assign individuals to other items only if they are necessary for proper handling, operations, or security of the item. More than two individuals may be assigned to an item of cargo, but this should be done only in exceptional circumstances, since it may restrict AMPS flexibility in efficiently loading aircraft. For example, do not assign individuals to a vehicle merely because they are to ride as passengers in that vehicle after arrival at destination.

(2) Begin entry in column 66. Leave unused spaces blank.

h. Quantity. (Ref. No. 8, columns 72-74)

(1) Contents. Use this field only when the roster of personnel to accompany the movement is unknown. Leave this field blank if there is an entry in columns 34-42 (SSAN). Enter the number of individuals, from 001 to 999. If more than 999 personnel, make additional cards, as required.

(2) Instructions. When this field is used, the following are the only entries to be made on that entire line:

<u>Columns</u>	<u>Entry</u>
1-7	UIC, as directed in subparagraph a above.
11-19	Enter: "PASSENGER"
43-44	If not pre-printed, enter "PX."
72-74	Enter number of passengers.
76	If not pre-printed, enter "6."

## CHAPTER 3

### PREPARATION OF INPUT TO HELI-MAINT

3-1. SOURCE DATA. The only valid source of data for updating the HELI-FILE is an aircraft load plan that has been approved by US Air Force Military Airlift Command.

#### 3-2. RESPONSIBILITIES.

##### a. Users.

(1) When a user perceives a need for a new aircraft load of helicopter, he should plan the load in coordination with an appropriate representative of USAF Military Airlift Command (MAC).

(2) The user then forwards a copy of the load plan, with documentation of MAC concurrence, to the program manager. He should include all information necessary for the program manager to prepare input to HELI-MAINT, as outlined in paragraphs 3-3 and 3-4, below.

##### b. Program Manager.

(1) Based on the information received from the user, the program manager prepares input as described below and updates the HELI-FILE.

(2) From the load list output from HELI-MAINT, the program manager should extract data for each load and enter on the load plan provided by the requester. He should then provide to each user a copy of the annotated load plan, for inclusion in Appendix A to this publication.

3-3. PREPARING TYPE 1 CARDS. The Type 1 format provides the header and package data for each load. The following describes the contents of each field.

<u>Column(s)</u>	<u>Name of Field</u>	<u>Instructions</u>
1	Card Sequence	The only valid entry is "1"
2	Number of cards	For a deletion, enter "1" For a load of 7 helicopters or less, enter "2" For a load of 8-14 helicopters, enter "3" For a load of 15-16 helicopters, enter "4"



<u>Column(s)</u>	<u>Name of Field</u>	<u>Instructions</u>												
3	Action code	To add a new load to the file, enter "A" To replace a load in the file, enter "R" To delete a load from the file, enter "D," and complete <u>only</u> columns 1-9. Leave all other fields blank.												
4-9	Load number	Enter load number as indicated in Appendix B.												
10-11	Quantity of larger (or only) helicopter type	Enter appropriate number, from 01-16												
12	Additional helicopter type (if any)	<table><tr><th><u>For This Helicopter</u></th><th><u>Enter</u></th></tr><tr><td>CH series</td><td>1</td></tr><tr><td>UH series</td><td>3</td></tr><tr><td>AH</td><td>5</td></tr><tr><td>OH-58</td><td>7</td></tr><tr><td>OH-6</td><td>9</td></tr></table>	<u>For This Helicopter</u>	<u>Enter</u>	CH series	1	UH series	3	AH	5	OH-58	7	OH-6	9
<u>For This Helicopter</u>	<u>Enter</u>													
CH series	1													
UH series	3													
AH	5													
OH-58	7													
OH-6	9													
13-14	Quantity of additional helicopter type	Enter appropriate quantity.												
15	Add cargo code	<table><tr><th><u>If largest acceptable class of cargo is:</u></th><th><u>Enter:</u></th></tr><tr><td>C5 - required</td><td>D</td></tr><tr><td>C141</td><td>C</td></tr><tr><td>C-130</td><td>B</td></tr><tr><td>Filler</td><td>A</td></tr><tr><td>If no cargo should be added, enter</td><td>0</td></tr></table>	<u>If largest acceptable class of cargo is:</u>	<u>Enter:</u>	C5 - required	D	C141	C	C-130	B	Filler	A	If no cargo should be added, enter	0
<u>If largest acceptable class of cargo is:</u>	<u>Enter:</u>													
C5 - required	D													
C141	C													
C-130	B													
Filler	A													
If no cargo should be added, enter	0													
16-35	Package 1 (Forward package, or only package) including:	Right-justify and zero-fill all entries:												
(16-21)	Weight (of helicopters in package and accompanying components)	Enter weight												

<u>Column(s)</u>	<u>Name of Field</u>	<u>Instructions</u>
(22-25)	Length of package	Enter length
(26-28)	Width of packages	Enter width
(29-32)	Forward fuselage station	Enter station of most forward extension of package into aircraft
(33-35)	Inset from right	Enter inches of space from right side of aircraft to package
36-55	Package 2 (Aft package, if two in load)	Enter data for aft package in the detail, field size and sequence indicated for package 1.
56-77	Remarks	Enter desired remarks.
78-80	Date	In column 78, enter last digit of calendar year. In columns 79-80, enter number for month, 01-12.

3-4. PREPARING TYPE 2 CARDS. The type 2 format provides data on individual helicopters in the load, listed in sequence of ascending CG fuselage station numbers. (If two have the same CG fuselage station number, either may be listed first.) No type 2 cards are required for a delete action. The following describes the contents of each field.

<u>Column(s)</u>	<u>Name of Field</u>	<u>Instructions</u>
1	Card sequence number	For a card describing up to 7, or the first 7, helicopters in a load, enter "2." For a card describing the 8th through the 14th helicopters, enter "3." For a card describing the 15th and 16th helicopters, enter "4."
2-3	Filler	Leave blank.

<u>Column(s)</u>	<u>Name of Field</u>	<u>Instructions</u>												
4-9	Load number	Enter data identical to that in the same field in the associated Type 1 card.												
10	Filler	Leave blank.												
11-20	<u>Description of</u>	<u>When card sequence is</u>												
	Heli # 1	2												
	# 8	3												
	#15	4												
(11)	Package number	Enter "2" if the helicopter is part of the aft of 2 packages. Otherwise, enter "1."												
(12)	Helicopter type	<table><tr><th><u>For this type</u></th><th><u>Enter</u></th></tr><tr><td>CH series</td><td>1</td></tr><tr><td>UH series</td><td>3</td></tr><tr><td>AH series</td><td>5</td></tr><tr><td>OH-58</td><td>7</td></tr><tr><td>OH-6</td><td>9</td></tr></table>	<u>For this type</u>	<u>Enter</u>	CH series	1	UH series	3	AH series	5	OH-58	7	OH-6	9
<u>For this type</u>	<u>Enter</u>													
CH series	1													
UH series	3													
AH series	5													
OH-58	7													
OH-6	9													
(13-16)	Forward fuselage station	Enter most forward extension of helicopter into the aircraft. Right-justify and zero-fill.												
(17-20)	CG Fuselage station	Enter station location of helicopter CG. Right-justify and zero-fill.												
21-80	Helicopter data	In each 10 column increment, enter data for additional helicopters, in the detail and sequence indicated for columns 11-20. Leave unused increments blank. On card sequence 4, leave columns 31-80 blank.												

## CHAPTER 4

### PRODUCTS

#### Section I. AMPS-VAL

4-1. GENERAL. Products of AMPS-VAL enable the user to correct errors found by the validation program and to insure that the cargo files built by AMPS-VAL describe accurately the cargo, personnel, aircraft and controls pertinent to the movement being planned or simulated. The user must recognize, however, that many types of errors cannot be detected or corrected by AMPS programs. For example:

a. Entries in the "Description" field are for the user's information; AMPS does not edit those entries and cannot detect discrepancies between the description and other data entries.

b. With minor exceptions; AMPS cannot detect error in fact.

(1) AMPS will reject a record with an invalid entry in the "Cargo Code" field. A valid code incorrectly assigned, however, cannot be detected. That is, a record describing a helicopter, but having a "TR" entry in "Cargo Code," will be accepted by AMPS and treated as a trailer.

(2) AMPS cannot detect incorrect dimensions, weights or CGs.

c. Some entries that are correct, from the user's standpoint, may be changed by the edit routines. For example, AMPS expects a 463-L pallet (cargo code "PA") to have a length of 88 inches and a width of 108 inches. If a pallet has any other dimensions, because cargo overhangs the pallet or because pallets are "married," the validation program changes the cargo code to "BU," and treats the pallet as bulk cargo.

d. Mating and telescoping can occur only when equipment links are identical. A prime mover with bumper number HQ-4 cannot be mated to a trailer with bumper number HQ-4T, and the edit routine cannot change either number to permit a match. Similarly, UID with an error in one or more digits cannot be corrected, but is treated as the UID of a different unit.

4-2. PRE-DIAGNOSTICS. This output of AMPS-VAL primarily flags input cards with an invalid "card type" entry (column 76), which will not permit entry of the record into the validation routines, since the program cannot determine which routine should be used in editing the card. This output is also used to show those errors which do not fit easily into the error format used for most diagnostics.



a. Invalid Card Type. Figure 4-1 shows the error message used. The "Invalid Card Type" flag is followed by a print of the entire card contents, and the user is advised that the card was rejected. In the first sample, column 76 is blank; in the second line, column 76 contains an alphabetic character; in the third, a number larger than six. The user should refer to the appropriate paragraph of Chapter 2 for instructions on correct entries.

b. Other Error Messages.

(1) "More than 1 card type 1," followed by a printing of the card(s) rejected by the program. The user should check the "options in effect" output (paragraph 4-5, below) to determine whether the record retained by the program is correct or must be replaced.

(2) "Problem with priority data," followed by a print of the rejected card, occurs when a type 3 card includes more than seven consecutive characters of which none is a plus (+) or comma (,). The user must correct the card in accordance with paragraph 2-6, above.

(3) "Invalid aircraft type," followed by a print of the rejected card, indicates a type 4 or type 5 card with an invalid entry in columns 1-5. (See paragraphs 2-7 and 2-9, above for necessary correction.)

(NOTE: (1), (2) and (3), above, discuss the ONLY editing of type 1, 3, 4 and 5 cards accomplished by the program. There is no edit of type 2 cards. Therefore, the user should check the printed output from these cards for accuracy.)

(4) "Bumper number and multicard are in conflict." This message indicates a type 6 card with an entry in columns 66-71 (Equipment Link) and an entry greater than 1 in columns 72-74 (Quantity). A following note advises that the program has generated a record with a quantity of 1. If the user determines that the quantity initially entered is correct, he must substitute a new card with that quantity, with columns 66-71 blank. (See paragraph 2-11j, above.)

(5) Two messages note that alphabetic entries in the quantity field of type 6 cards have been changed to zero or 1. The user need take no action.

4-3. DIAGNOSTICS. This format flags errors found on type 6 cards, in either passenger or cargo data. Each message comprises two lines; the first begins with the unit identification (UID) and continues with a line of dots for columns in which no error is found, or a print of any

.....

00.4 REJECTED  
A00.5 REJECTED  
900.6 REJECTED

JP131063066002330060  
JP131063066002330060  
JP131063066002330060

PRE DIAGNOSTICS  
TRK CM EQUIP JEEP TOW  
TRK CM EQUIP JEEP TOW  
TRK CM EQUIP JEEP TOW

CATCI  
CATCI  
CATCI

.....  
INVALID CD-TYPE  
INVALID CD-TYPE  
INVALID CD-TYPE

Figure 4-1. Invalid card type. ....

field containing a detected error. The second line shows the entire record after validation by the routine. This line may be followed by "REJECT" if the validation cannot make the record acceptable.

a. The first record encountered for each unit is printed, even though no error is found. Since the records were previously sorted by unit, this provides a visible audit of units and assurance that data for that unit contained no errors of types monitored by the validation routine. Figure 4-2 is an example of this format.

b. Figure 4-3 shows use of this format to display errors detected by the validation routine.

(1) In the first message, the top line indicates that an error was found in the SSAN field. (Alphabetic "O" used instead of numeric "0.") The bottom line shows that the routine zeroed the entire field, but did not reject the record. The user should correct the card and reenter if the documentation is for actual flight.

(2) In the second message, the top line is printed "TP" in columns 43-44 (cargo code) to indicate the entry is invalid. The bottom line indicates that the program could not correct the error and has rejected the entire card. The user must correct the entry to have the card accepted. (See paragraph 2-11, above.)

(3) In the third message, asterisks appear in columns 45-59 of the top line, to show that no dimensions or weight were entered. (All type 6 cards must have entries in these fields unless the cargo code contains "PX.") The bottom line shows that the routine could not correct the error and has rejected the record. The user must correct the card. (See paragraph 2-11, above.)

(4) In the top line of the fourth message, as in the third, zeros in columns 60-62 indicate that the user made no entry for center of gravity (CG). In the fourth message, however, the bottom line indicates the corrective action of the program: When no CG is entered, the program assumes the CG to be the item center, and it inserts into the CG field of the file record one-half the length of the item. This could not be corrected in the third message, because no length had been entered.

AIR MOVEMENT PLANNING SYSTEM	U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA	DATE 06/18/70	TIME 17:38:23	2
EXAMPLES OF AMPS DIAGNOSTICS				
DIAGNOSTICS OF INPUT				
CA:G:1	00000000UPX	317 999	000 6	
CA:G:	PASSENGER			

Figure 4-2. Diagnostics, example A.





4-4. PRIORITY DATA. This format lists the units in the priority sequence indicated by the type 3 cards. In the absence of any type 3 cards, AMPS assumes the alphanumeric sequence of UID to be the user's priority. The format also shows any movement "packages" the user formed by combining units and, for each unit, shows the total weight of cargo items "outsize," by dimension or weight, to C-141 aircraft. Figure 4-4 is a sample of this format.

a. The sample in Figure 4-4 illustrates a priority listing where neither unit had outsize cargo and the user did not enter type 3 cards.

b. If either unit had outsize cargo, the total weight of that cargo, in pounds, would be shown under the column heading "Outsize Cargo Weight."

c. Paragraph 2-6c(1), above, illustrates an example of a type 3 card that prescribes a sequence and combines some units into a package. Use of that card would result in the following entries in the priority data format for the columns indicated:

<u>UID</u>	<u>Priority</u>	<u>Combined UID</u>
WABKAA	1	
WB9CAA	2	W4GBAA
W4GBAA	3	WDCKAA
WDCKAA	4	
WBDBAA	5	

This shows that the units will be processed in the sequence indicated under "PRIORITY," and that units WB9CAA, W4GBAA and WDCKAA will be treated as a single package for load planning, though each passenger and cargo item will retain its individual unit identification.

4-5. OPTIONS IN EFFECT. Of the ten options listed in this format, only the last two, "Number of Copies" and "Line Count," actually show the option condition in effect. The first eight columns show which options the user has changed from their default condition. (See paragraph 2-4, above.) Figure 4-5 is a sample of this output format.

a. Each of the first eight columns indicates the user's selection of the alternate condition if there is an "X" in that column. Figure 4-5 illustrates the result of a user's accepting the default condition on seven of these eight options, but requiring the program to observe unit integrity. The last two columns show that the user accepted the default condition of both of those options.

AIR MOVEMENT PLANNING SYSTEM		U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA		TIME	22546225	7
.....		SAMPLE RUN FOR USERS MANUAL		.....		
PRIORITY DATA						
U I D	OUTSIDE CARGO WEIGHT	PRIORITY	COMBINED UID			
CATGS		1				
CAT56		2				

Figure 4-4. Priority data.

```

4-5. PLANNING SYSTEM  U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA
*****
SAMPLE RUN FOR USERS MANUAL
*****
OPTIONS IN EFFECT
*****
NO  CARD  VJ  NO  ND  T  QJ  UNIT  GENE  NO-  LINE
LEST  DECK  DIAS  MATE  SCOPE  PLTD  INTEG  RATE  COP  COUNT
X
1  55

```

Figure 4-5. Options in effect.



b. An "X" will appear in one of the first eight columns when directed by the user on Part A, Form AMPS-1. The values in the last two columns reflect no entry in either of those fields on Part A, AMPS-1; any entry in those fields (1-9 in Nr-Cop or 40-60 in Line Count) will replace the values shown in Figure 4-5. (See paragraph 2-6, above, for effects of default options and alternatives.)

#### 4-6. AIRCRAFT DATA.

a. When the user selects the "GENERATE" option, the aircraft data output will not list the generated aircraft, but will indicate, as shown in Figure 4-6, that the option is being followed. The mix of aircraft selected will be shown in "Parameters in Effect." (See paragraph 4-7, below.)

b. When the input includes type 5 (aircraft data) cards, information from those cards will be listed in the aircraft data output with additional information produced by the program, as illustrated in Figure 4-7.

c. The information is arranged as it is in the program file. Each data field in Figure 4-7 is annotated with a circled reference number. Table 4-1, below, uses those same reference numbers to explain the contents of each field and to indicate whether the data came from input or was generated by the program.

Table 4-1. Aircraft Data

<u>Reference Number</u>	<u>Contents of Field</u>	<u>Source</u>
1	Processing sequence	Program generated
2	Chalk number	Program generated
3	USAF Command providing aircraft	Ty 5 cd, col 57-59
4	Type/model aircraft	Ty 5 cd, col 1-5
5	UID, if assigned to a unit	Ty 5 cd, col 23-29
6	Mission identifier	Ty 5 cd, col 30-41
7	Departure airfield (ICAO code)	Ty 5 cd, col 15-18
8	Destination airfield (ICAO code)	Ty 5 cd, col 19-22
9	ACL*	Ty 5 cd, col 6-11

\*Zeros indicate no input entry; standard parameters used.

AIR MOVEMENT PLANNING SYSTEM . . . . . AIRCRAFT DATA AIRCRAFT WILL BE GENERATED	U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA . . . . . EXAMPLES OF AMPS DIAGNOSTICS . . . . .	DATE 08/10/78 . . . . .	TIME 17:30:26 . . . . .	10 . . . . .
--	--	----------------------------	----------------------------	-----------------

Figure 4-6. Aircraft data, generated.

AIR MOVEMENT PLANNING SYSTEM U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA DATE 08/28/78 TIME 22:46:25 9

SAMPLE RUN FOR USERS MANUAL

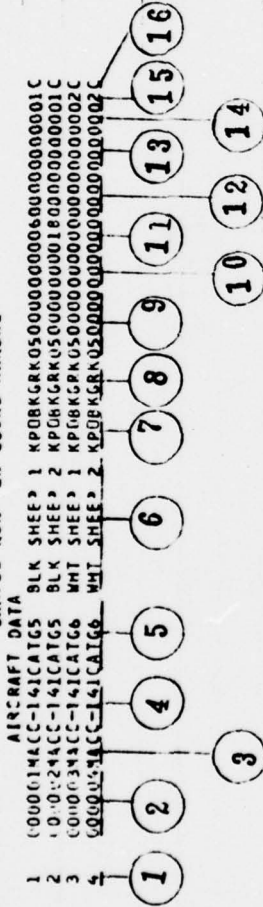


Figure 4-7. Aircraft data, from input.

Table 4-1 (Cont). Aircraft Data

<u>Reference Number</u>	<u>Contents of Field</u>	<u>Source</u>
10	Number of passengers, all passenger load*	Ty 5 cd, col 42-44
11	Number of passengers, with equipment*	Ty 5 cd, col 45-47
12	First loadable station*	Ty 5 cd, col 48-51
13	Last loadable station*	Ty 5 cd, col 52-55
14	Comfort pallet on aircraft*	Ty 5 cd, col 56
15	Priority from type 3 cards or default	Program generated
16	Aircraft type code	Program generated

4-7. PARAMETERS IN EFFECT. This output, illustrated in Figure 4-8, provides to users a reference of information on limitations and restrictions observed by AMPS programs.

a. The "single item limits" determine acceptability of an item for transport in a type of aircraft.

(1) An item exceeding any one of the limits shown for C-5 aircraft is categorized by the program as "not air transportable," and it will be listed in "cargo/passengers not loaded" at the end of the print. (See paragraph 4-14, below.)

(2) An item exceeding any one of the limits shown for C-141 aircraft is categorized as "outsize," and the listing of the item in the "cargo data" format (see paragraph 4-8, below) will include an asterisk under the "outsize" column and indicate the smallest aircraft capable of its transport is a C-5.

(3) These limits can be changed only by revision of the program. The user cannot alter any of these by input.

b. Values shown under the "ACL" and "PCG" columns, and on the line for "Default passenger weight", are default values. The user can alter any of these by appropriate entries on type 4 cards, and the changed values will be shown on this format, since the changes affect all aircraft used in the run. It should be noted that a type 5 card can change, for example, the ACL for a specific aircraft, but that change would not be shown on this format.



AIR FORCE PLANNING SYSTEM      U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA      DATE 08/28/78      TIME 22:46:42      10  
 .....      SAMPLE RUN FOR USERS MANUAL      .....  
 .....      PARAMETERS IN EFFECT      .....

SINGLE ITEM LIMITS							
	LTH	HTH	HTH	WEIGHT	ALL	PCG	MIX
CE	999	223	156	200000	110000	1275	
CL41	800	122	108	50000	50000	900	
CL30	500	122	108	30000	30000	530	
FILL	200	115	80	7500	*****	****	****

DEFAULT PASSENGER WEIGHT = 240  
 SCHEMATIC PRINT WIDTH = 18

Figure 4-8. Parameters in effect.

4-8. CARGO/PASSENGER DATA. The name of the format in Figure 4-9 is misleading, because the listing includes both cargo and passengers mated with equipment from all the type 6 cards input, less those rejected by the validation routine. Columns headed "UID" through "EQP-LINK" show all data from the input cards in the same order as on the cards, for those headings. Records are listed in the order they appear in the master file, after sorting by the program. Data from two columns of the type 6 card appear in different forms; those, as well as the additional columns in this format, are explained below.

a. The column "SEQ-NO" shows the sequence in which items are listed in the master file. A break in sequence numbers, such as found in Figure 4-9 between 41 and 51, indicates that the missing items, 42 through 50, are the same as the previously printed item, 41.

(1) Sequence number 11 is a record for a "Trk driver," assigned by equipment link as a passenger required to accompany the vehicle and trailer listed at sequence numbers 9 and 10. The next sequence number listed is 14, indicating that sequence numbers 12 and 13 were also drivers assigned to the same truck and trailer. Note that these three drivers were listed on three input cards, not on one card with a quantity entry of "003" (which would have been rejected).

(2) Sequence number 15 is a record of a passenger who is not assigned to a cargo item. Since the next sequence number is 25, this shows that there are ten such passengers. Since there is no equipment link, the record at sequence 15 may represent ten identical type 6 cards, or one type 6 card with a quantity entry of "010."

(3) Sequence numbers 25 and 26 show two vehicles with identical descriptions, dimensions and weights. They are listed separately only because of the different equipment links.

b. To the right of the "EQP-LINK" column is the "OUTSIZE" column. An asterisk will be printed in this column for each item that, because of weight or dimension, requires a C-5 aircraft.

c. The next column to the right is "SP HD" (special handling required), which reflects an entry by the user in column 75 of the type 6 card (see paragraph 2-11k, above).

Figure 4-9. Cargo data.

d. An entry in the column "SH RQ" indicates the item on that line requires shoring, either for load spreading, floor protection or positioning. The program generates this entry for each trailer, tracked vehicle and helicopter. The entry serves to remind the user to verify that the weight entry on that line includes the weight of necessary shoring.

e. Entries in the "PLANE NEEDED" column indicate the smallest aircraft that can transport the items described.

f. In the "PAX" column, the program enters, for each passenger record, an "R" (required) if the record includes an equipment link matching the equipment link of a cargo item; otherwise, an "A" (available) is entered.

g. Immediately following the listing of cargo and passenger data is an audit of all input cargo, passenger and aircraft records, in the format shown in Figure 4-10.

(1) The "Master-Records" line gives the total of all cargo items and required (linked to an equipment item) passengers that were accepted by the validation routine.

(2) The "Aircraft" line gives the number of type 5 records accepted by the program.

(3) The "Avail Pass" line gives the number of passenger records not linked to equipment items that were accepted by the program.

(4) The "Rejects" line shows the number of records listed in the "Diagnostics" printout as rejected, plus the number of aircraft records rejected.

(5) The "Pre-Rejects" line shows the number of records listed in the "Pre-Diagnostics" printout as rejected.

(6) When AMPS-VAL is run alone, this will be the last item in the printout. When AMPS-VAL is run in conjunction with AMPS-LOAD, this format will be followed by the first format of AMPS-LOAD products, described in Section II, below.



AIR MOVEMENT PLANNING SYSTEM    U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA    DATE 08/28/78    TIME 22:47:18    12  
 \*\*\*\*\*  
 MASTER-RECORDS = 00032  
 AIRCRAFT = 00004  
 AVAIL PASS = 00020  
 REJECTS = 00100  
 PIE REJECTS = 00000  
 \*\*\*\*\*  
 SAMPLE RUN FOR USERS MANUAL

Figure 4-10. Records audit.

## Section II. AMPS-LOAD

4-9. GENERAL. Products of AMPS-LOAD provide users with detailed plans and documentation for all aircraft loads involved in the movement defined by input.

a. These products can serve as the basis for coordination of the movement with supporting Air Force transport unit representatives, and, with concurrence of those representatives, may be used as attachments to, or as substitutes for the DOD manifest forms (DD Forms 2130(C-5), 2131 (C-130), and 2132 (C-141)).

b. Careful review by the user of the diagrams and manifests, in coordination with supporting USAF representatives, will frequently reveal ways to improve or consolidate loads planned by AMPS.

(1) When the "Integrity" option has been used, there may be one or two partial loads at the end of the group for each unit that can be consolidated. Frequently, partial loads from two or more units can be similarly combined.

(2) AMPS cannot plan loading of vehicles (except 1/4-ton trucks) to overhang the aircraft ramp. Review of the load may enable addition of cargo by moving vehicles to overhang the ramp.

(3) AMPS does not consider aircraft compartment load limits or restrictions on pounds per linear foot or pounds per square foot on cargo floors. Air Force review will occasionally reveal a necessity for shifting cargo items to comply with these restrictions.

c. Except for "Statistics," each page of AMPS-LOAD output formats for any one processing run contains an identical two-part page heading. "Statistics" has only the first part.

(1) The first part consists of two lines of print. The first line shows the command/agency operating AMPS, the date and time of processing, and a page number which runs consecutively throughout the print. The second line gives the title entered by the user.

(2) The second part consists of four lines of print, giving information specific to the individual load. This part also carries a page number which is consecutive within each load.

d. Any run of AMPS-LOAD must be preceded by AMPS-VAL; therefore, the outputs described in this section will always follow a complete sequence of the AMPS-VAL outputs described in Section I.

4-10. STATISTICS. This is the first output produced by AMPS-LOAD, and it will be printed on the next page after the records audit. To summarize loading progress, the same format is printed following the groups of loads for one unit or, when the user has combined units into loading packages by use of type 3 cards, following the loads for each such package.

a. Figure 4-11 shows the format as used at the beginning of a run.

(1) The aircraft portion of the format shows the number of each type aircraft available for loading. If the "GENERATE" option is used, this portion will be blank in beginning statistics.

(2) The utilization portion of the format contains only zero entries, since no aircraft have yet been loaded.

(3) The cargo portion shows the number of pieces of cargo, with separate totals for cargo requiring C-5 aircraft and for cargo that can be transported by C-141/C-130, and the number of passengers, including both those linked to equipment items and those not so assigned.

b. Figure 4-12 shows the use of this format to recap loading progress at the end of the loads for the first unit.

(1) The aircraft portion indicates that two C-141 aircraft were used and two remain available. When the "GENERATE" option is used, this portion will always show an available quantity of one of each type of aircraft the user included in the mix desired.

(2) The utilization data is cumulative, and it is expressed as the percentage of allowable weight and the percentage of available area of all aircraft used thus far by the cargo and passengers in those aircraft.

(3) The cargo section provides totals of cargo items and passengers loaded into aircraft thus far and the number of each remaining to be loaded.

.....

4-21



AIR MOVEMENT PLANNING SYSTEM      U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA      DATE 06/28/79      TIME 22:14:46      PAGE 20  
 .....  
 SAMPLE RUN FOR USERS MANUAL      .....

```

.....
STATISTICS
.....
*****TYPE A/C---NOT LOADED---LOADED*****
*****C-5---00*****
*****C-141---22*****
*****C-130---00*****
*****UTILIZATION---WEIGHT---AREA*****
*****C-5---00*****
*****C-141---8363*****
*****C-130---00*****
*****CARGO---NOT LOADED---LOADED*****
*****STANDARD---9*****
*****OUTSIZE---0*****
*****PASSENGERS 17*****
.....
  
```

NEXT UNIT CALLED 02

Figure 4-12. Recap statistics.

(4) In use of this format following the last unit or package of units, if the cargo portion shows any number of cargo items or passengers as not loaded, those cargo items or passengers will be listed in "cargo/passengers not loaded" (see paragraph 4-14, below). If the aircraft portion shows any number of aircraft not loaded, and if the aircraft were input by use of type 5 cards, the specific aircraft not used will be listed in "Aircraft not used" (see paragraph 4-15, below).

(5) The note following the statistics block states that the next unit to be processed is that unit with priority 2 (see paragraph 4-4, above). Therefore, the statistics shown are the beginning statistics for that priority 2 unit.

4-11. LOAD DIAGRAM. For each aircraft load containing cargo items, the first format printed is the load diagram, a sample of which is at Figure 4-13. The purpose of the load diagram is to expedite the coordination between the unit and the supporting Air Force carrier, and it is also helpful to the unit in marshaling equipment for delivery to the aircraft loading area.

a. Following the page heading described in paragraph 4-9c, above, are four lines of headings for the diagram format. The first of these lines:

(1) Identifies the type aircraft represented.

(2) Reminds the user that the graphic representation of the cargo and the aircraft cargo compartment is only approximate, within restrictions of printing lines and columns.

(3) Notes the direction in which vehicles are facing. In loading C-5 aircraft, the program assumes all cargo will enter the aircraft by way of the aft ramp, facing forward, and will exit by the forward ramp. In loading C-130 or C-141 aircraft, which have only aft ramps, the program assumes all vehicles will be backed into the aircraft, so as to facilitate unloading. There are, however, some exceptions; for example:

(a) An M35A2 cargo truck with a normal cargo load up to 81" in height, backed into a C-141 aircraft can be moved forward only as far as fuselage station 538, because of the intrusion of the crew rest facility into the cargo compartment. Facing forward, the same vehicle can be moved to station 482. Therefore, to use the aircraft more efficiently,



the truck is faced forward, and the change from the normal direction is noted in the "Comments" portion of the cargo manifest (see paragraph 4-12, below).

(b) In any of the aircraft, when a standard helicopter load from the HELI-FILE is used by the program (as in Figure 4-13) those helicopters are to be arranged as indicated in the Appendix A reference for that load. This fact is noted on the cargo manifest as a remark pertaining to the helicopter load or load package.

b. The second line provides directional orientation of the diagram and, when the aircraft is a C-5, a comment for completion by the Air Force loadmaster indicating aircraft attitude desirable for loading.

c. The third line shows the locations of several fuselage stations, for ready reference location of individual cargo items, and the fourth line pinpoints the location of that fuselage station.

d. The diagram proper begins with a line of dashes indicating the right side of the cargo compartment. Eighteen lines are used to depict the layout of cargo items, and the diagram is completed by another line of dashes representing the left side of the cargo compartment.

e. Cargo items are represented as rectangles. When the load contains telescoped items, the rectangles representing those items will be overlapped.

f. The rectangles will usually contain some type of identification.

(1) The two smaller rectangles in Figure 4-13 show typical identification. An index number ("#3" and "#4" in these rectangles) is a reference to the "Item-No" in the cargo manifest for this load. The fuselage station location of the cargo item CG is shown. An abbreviated description of the item is followed by the weight. Finally, if the input description included an equipment link, that link follows the "B#" (bumper number).

(2) Less information is found in smaller rectangles. Some may contain only the index number, others no entry at all.

(3) The two larger rectangles represent a two-package load of helicopters from the HELI-FILE. The identification data includes the package number, the load plan number in Appendix A where the detailed layout is found, and the index numbers of the cargo items in that package. In Figure 4-13, the rectangle on the left is identified as package #1 of



load plan 170540, which contains the first two items listed on the manifest. The rectangle on the right is identified as package #2 of the same load plan, and it contains the 5th and 6th items listed on the manifest. (Load plan 170540 is illustrated on page A-10, Appendix A.)

(4) Some very narrow items may be represented by a single line, rather than a rectangle, or by a rectangle covering only two horizontal lines. In either case, no identification is provided.

g. AMPS load planning logic places cargo items as close together as possible, within certain minimum spacing requirements imposed by the Air Force. Some situations, however, make greater spacing desirable, and the program provides that "spreading" of the load.

(1) The standard Air Force requirement is for six inches between cargo items, to provide for tiedown. An exception is that tracked vehicles require forty inches forward and forty inches aft of the item and, on a C-5 aircraft, twenty inches on each side. The Air Force loadmaster can reduce these requirements for specific loads, which may enable addition of another item to the load. For example, when two tracked vehicles are loaded one behind the other (as items #3 and #4 in Figure 4-13), the forty-inch requirement results in eighty inches of space between those items. The loadmaster may determine that a total of forty inches is adequate, and the forty inches saved may allow adding another vehicle to the load.

(2) On a C-5 aircraft, the height of the cargo compartment increases from 114" at the sides to 162" at a point three feet inboard from either side. Therefore, cargo items with a height greater than 114" must be moved inboard three inches for each four inches of additional height required. AMPS accomplishes that placement.

(3) Partial loads, or loads of heavy cargo items, may use only a small area of the cargo compartment. AMPS logic will "spread" the items in such loads, providing as much space as possible between items, to facilitate tiedown and in-flight inspection. If possible, the program will place all items in a single line down the center of the cargo compartment, to expedite loading and unloading and, in C-130 and C-141 aircraft, to provide seating space on both sides of the aircraft. However, if the width of the cargo will not permit seating on both sides, cargo items will be moved to the right to insure seating on the left side. The exception to that logic occurs when a cargo item is so heavy that moving it to the right could result in a lateral out-of-balance condition. Such items are always loaded on the center line.

(4) Other than the minimum requirements for tiedown space, any of the logic for providing additional space is subject to modification as required to shift cargo in adjusting balance of the load.

4-12. CARGO MANIFEST. This format is designed to provide all information necessary for documenting the transport of cargo, other than those documents and certificates required for transport of security materials or hazardous items. Figure 4-14 is a sample of the cargo manifest, and it illustrates the manifest information provided for the items shown in the load diagram in Figure 4-13.

a. Following the page heading (as described in paragraph 4-9c) are two lines of heading for this format. The first of these identifies the format and gives a legend for the symbols found in the "Comments" column on the right side of the format. The column headings in the second line identify the data elements listed.

b. With one exception, each rectangle on the diagram is described by one line on the cargo manifest. The exception is the description of a standard helicopter load, and this is illustrated by the first four print lines of the cargo manifest proper.

(1) The first line identifies the helicopter load and the package within the load, and it shows dimensional, weight and location data pertinent to that package. Note that height is not given; the manually prepared standard helicopter loads assume necessary disassembly of the helicopters to fit into the aircraft. The length and width provide for arrangement of the helicopters, as illustrated in Appendix A, to include special tiedown space required. The weight shown is taken from the input data. The entry at "CG-STA" shows the fuselage station at which rests the combined CG of all helicopters in the load when arranged as indicated in Appendix A. The entry at "MOMENT" is the product of the weight multiplied by the CG fuselage station, and it shows, in inch-pounds, the force imposed (in this case) by 4,800 pounds at an arm of 665 inches. The forward fuselage station (FWD-STA) entry completes the location data, and the entry at "AREA" shows the number of square feet occupied by the package.

(2) The second line provides any remarks appropriate to the package. Other remarks, pertinent to individual aircraft, are found in Appendix A.

(3) The next lines (in this case, 2) identify the individual helicopters by item number (for reference to the load diagram), unit, description, and equipment link (BUMP-NO). Individual weight and dimensions are

AIR MOVEMENT PLANNING SYSTEM U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA DATE 09/11/78 TIME 12:53:20 PAGE 14

\*\*\*\*\* SAMPLE RUN FOR USERS MANUAL \*\*\*\*\*

\*\*\*\*\* AIRCRAFT DATA \*\*\*\*\*  
 CARRIER: 10, 47C MOD 1  
 \*\*\*\*\*  
 \*\*\*\*\*

\*\*\*\*\* MISSION NUMBER \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*

\*\*\*\*\* DEPART AFLO \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*

\*\*\*\*\* CHALK \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*

\*\*\*\*\*

CARGO MANIFEST COMMENTS: 1. 209,000 2. 2,660 3. 1 4. 2

\*\*\*\*\* SPECIAL HANDLING \*\*\*\*\*

ITEM NO. UID Nomenclature BUMP NO. LENGTH WIDTH HEIGHT WEIGHT CG STA MOMENT FWD STA AREA COMMENTS

1 HELI L300 # 170540 PKGN 1 384 176 4,800 665 3,192,000 637 459

\*\*\*\*\* HELI-PACKAGE REMARKS \*\*\*\*\*  
 \*\*\*\*\* HELICOPTERS FACING AS SHOWN IN APPENDIX 1. AMPS USER MANUAL \*\*\*\*\*

1 CATS 0453 HELICOPTER X1

2 CATS 0453 HELICOPTER X2

3 CATS 0453 REC'D VEH 254 124 115 48,500 1,082 52,477,000 355 213

4 CATS 0453 REC'D VEH 254 124 115 48,500 1,616 69,676,000 1,239 213

\*\*\*\*\* HELI L300 # 170540 PKGN 2 384 176 4,800 1,762 8,457,500 1,557 659

\*\*\*\*\* HELI-PACKAGE REMARKS \*\*\*\*\*  
 \*\*\*\*\* HELICOPTERS FACING AS SHOWN IN APPENDIX 1. AMPS USER MANUAL \*\*\*\*\*

5 CATS 0453 HELICOPTER X3

6 CATS 0453 HELICOPTER X4

\*\*\*\*\* SUBJECTS \*\*\*\*\*  
 CARGO 6 106,500 1,245 132,902,500 1,375  
 PAX 2 480 1,741 835,580  
 \*\*\*\*\*

\*\*\*\*\* TOTALS \*\*\*\*\*  
 107,080 1,248 133,638,280

\*\*\*\*\* AIR MOVEMENT PLANNING SYSTEM \*\*\*\*\*  
 L300 PLANNED BY \*\*\*\*\*  
 DATE 09/11/78

\*\*\*\*\* SIGNATURE OF LOADING AGENT \*\*\*\*\*  
 DATE \*\*\*\*\*

\*\*\*\*\* SIGNATURE OF UNLOADING AGENT \*\*\*\*\*  
 DATE \*\*\*\*\*

Figure 4-14. Cargo manifest.



omitted, as all computations are based on the package configuration. However, Appendix A provides the forward fuselage station and CG fuselage station for each helicopter. A "shoring required" comment is not noted here, but it is shown in the cargo data (see paragraph 4-8, above).

c. The lines describing items 3 and 4 illustrate typical cargo manifest entries.

(1) The "ITEM-NO" entry is assigned by the program, numbering items in sequence from left to right. Side-by-side items are numbered in sequence of left to right location of their CGs.

(2) Entries in columns UID, Nomenclature, Bump-No (equipment link) dimensions and weight are taken from validated input.

(3) Entries in CG-STA, Moment, FWD-STA and Area columns are computed and entered as described in subparagraph b(1), above.

(4) Comment symbols indicating "shoring required" are automatically entered for each cargo item with a cargo code for trailer or tracked vehicle. Comment symbols for "facing forward" are entered when appropriate in loads for C-130 or C-141 aircraft. Symbols indicating a special handling problem are entered when the input data for that item includes an entry in column 75.

d. Immediately below the listing are two lines of subtotals and a line of totals.

(1) The first subtotal line shows the number of pieces of cargo in the load and their total weight. This is followed by the CG station of the total cargo load, which is computed by dividing the total of all moments by the total cargo weight. Next on the line is the moment total for cargo items and finally, the total area used.

(2) The second subtotal line shows the number of passengers in the aircraft and their total weight. In C-5 aircraft loads only, "1741" is entered under "CG-STA" and is multiplied by the passenger weight total, generating an additional moment. Fuselage station 1741 marks the approximate center of the C-5 passenger compartment, and the additional computation is pertinent, since the passenger weight is concentrated in one area. In the C-141 and C-130 aircraft, however, the passengers are seated along the sides of the aircraft, and their weight is more uniformly distributed along the entire cargo compartment. Therefore, no passenger moment is computed for those aircraft.



(3) The total line shows the total weight of cargo and passengers, for all types of aircraft. In C-5 aircraft loads, the passenger moment is added to the total cargo moment for a total load moment, which is then divided by the total weight of cargo and passengers to determine the final load center of gravity. (The final load center of gravity must be within certain limits to insure safety of flight. For a C-5 load, as shown in Figure 4-14, when the load weight is between 80,000 and 120,000 pounds, the desired CG is station 1240, plus or minus 40 inches. Balanced at 1248, this load is safe to fly.) On loads for the C-141 and C-130 aircraft, the total line shows the total weight of passengers and cargo, and both the load center of gravity and total moment are the same as those entries on the cargo subtotal line.

e. Provision for authentication completes the format. Use of the signature spaces identified on the format will be in accordance with agreements between major unit commanders and the supporting Air Force carrier command.

4-13. PASSENGER MANIFEST. Figure 4-15 shows a sample of the passenger manifest. This format is used to list passengers, whether accompanying an equipment load or in an all-passenger load.

a. The entry in "LINE#" is computer generated, for ease of reference by the user. Other entries are taken directly from validated input, with one infrequent exception. The entry in "BUMP#" will be the input equipment link, unless in a previous load, it was not possible to include all passengers linked to cargo items in that load. In such a case, the program takes the following actions:

(1) Preceding the passenger manifest for the earlier load will be a remark like that shown in Figure 4-16, advising that some number of required passengers could not be accommodated.

(2) The chalk number of the earlier load is substituted for the equipment link in the record of each required passenger not loaded in the proper aircraft.

(3) When those passengers are placed into another aircraft, the entry at "BUMP#" in the passenger manifest will be the chalk number of the aircraft to which they should have been assigned.

b. Authentication provisions are the same as those on the cargo manifest, plus the "anti-hijacking" certificate required by the Air Force, which is signed by the senior passenger on each aircraft.





4-14. CARGO/PASSENGERS NOT LOADED. This information is sorted to facilitate review by the user, and the sorted data is shown in two formats, both of which appear in Figure 4-17. Both of these samples are extracts from an actual run using live data; therefore, to prevent identification of units and individuals, portions of the UIC, Name, and SSAN fields have been blanked out.

a. The upper format on Figure 17 lists "available" (not linked to a cargo item) passengers who were not loaded. Subparagraphs below are keyed to reference numbers on the format, and they explain data contents of the field indicated by the reference numbers.

(1) The number in this field refers to the "SEQ-NO" column of the cargo data format (Figure 4-9, above), where the complete identification is presented.

(2) Unit Identification.

(3) Rank.

(4) Name.

(5) SSAN.

(6) A numeric value assigned by the program to the cargo code "PX."

(7) Weight, from input or default value, as applicable.

b. The lower format on Figure 4-17 lists cargo items not loaded, together with any passengers linked to those items. This information is especially valuable as a source of fillers for loads determined by review to need improvement. Also, these items not loaded may establish a requirement for additional, or larger, aircraft, when some of the items are outsize to aircraft offered or when the items cannot be accommodated by adjusting the planned loads. Subparagraphs below are keyed to reference numbers on the lower format in Figure 17, and they explain contents of fields indicated by those reference numbers. Entries for passengers linked to equipment items follow the format described in subparagraph a above, and the equipment link is printed between the SSAN and cargo code fields.

(1) Same as subparagraph 2(1) above.

(2) Unit Identification.



AIR MOVEMENT PLANNING SYSTEM U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA DATE 09/29/78 TIME 09:53:33 PAGE 126  
 \* \* \* \* \*  
 SAMPLE RUN FOR USERS MANUAL  
 \* \* \* \* \*  
 \*\*\* AVAILABLE PASSENGERS NOT LOADED \*\*\*  
 363 WP DO SP4HA TD DMN M 26 1212 02 000240  
 354 W9 D3 SP4KF SD EMIS A 22 5134 02 000240  
 355 W2 D3 SCIGR W 14N M 41 6667 02 000240  
 (1) (2) (3) (4) (5) (6) (7)

AIR MOVEMENT PLANNING SYSTEM U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA DATE 09/29/78 TIME 09:53:34 PAGE 120  
 \* \* \* \* \*  
 SAMPLE RUN FOR USERS MANUAL  
 \* \* \* \* \*  
 \*\*\* CARGO-PASSENGERS NOT LOADED \*\*\*  
 103 WA P0 TRK GN EQUIP JFEP0010000000SC11707131064066002330050  
 119 WA P0 TRK GN EQUIP JFEP0010000000SC71 07131064066002330050  
 120 WA P0 TRK GN CASKIER T00010000000SC73 07131064066002291050  
 121 WA P0 TRK CGO M416 1/4T0010000200SC73 05109062044001060055  
 (1) (2) (3) (4) (5) (6) (7) (8) (9)

Figure 4-17. Cargo/passengers not loaded.

(3) The first 17 characters of the "nomenclature" field of the cargo data format (Figure 4-9 above).

(4) Trailer overlap or SSAN, as appropriate.

(5) Equipment link.

(6) Cargo code, connected to a numerical code used by AMPS-LOAD. Listed below are cargo codes with their numerical values:

<u>CGO</u> <u>CODE</u>	<u>NUMBER</u> <u>VALUE</u>	<u>CGO</u> <u>CODE</u>	<u>NUMBER</u> <u>VALUE</u>	<u>CGO</u> <u>CODE</u>	<u>NUMBER</u> <u>VALUE</u>
PX	02	JP	07	05	12
PA	03	HT	08	AH	13
BU	04	PM	09	UH	14
TR	05	TK	10	CH	15
ST	06	06	11		

(7) Dimensions (length, width, height).

(8) Weight.

(9) Center of gravity.

#### 4-15. AIRCRAFT NOT USED.

a. This output will appear only infrequently. Generally, the aircraft provided will accept all the cargo and personnel only after manual adjustment of the planned loads, if at all. Also, when the "GENERATE" option is selected, this format will not appear, even though one of each type aircraft in the selected mix appears in the final recap statistics. Listings of both aircraft not used and cargo/passengers not loaded will occur only in one of three circumstances, or any combination of them:

(1) When the "not loaded" list contains only passengers and the aircraft are C-5s.

(2) When cargo items not loaded are outsize to the aircraft not used.

(3) When the aircraft are assigned to units and all cargo and passengers for those units were loaded into other assigned aircraft.

b. Figure 4-18 illustrates this output format. Subparagraphs below are keyed to reference numbers on Figure 4-18, and they explain contents of the fields indicated by the reference numbers.

- (1) USAF command furnishing the aircraft.
- (2) Aircraft type.
- (3) Identification of unit to which the aircraft is assigned, if any.
- (4) Mission identifier.
- (5) ICAO code of departure airfield.
- (6) ICAO code of arrival airfield.
- (7) ACL.
- (8) Maximum number of passengers, all passenger load.

### Section III. HELI-MAINT

4-16. GENERAL. For each update, HELI-MAINT output provides a listing of all input transactions, annotated with reasons for rejection of any transaction card, and a load list, which is a print of the entire HELI-FILE after updating.

4-17. TRANSACTIONS LISTING. Figure 4-19 illustrates the transactions listing for two loads added to the HELI-FILE.

a. In each load, the first line of print shows only a line of dots, one dot for each card column, with numbers at each tenth column. This line is for convenience in counting columns for cross-referencing with the input cards.

b. The second line of each load is an exact duplication of the type 1 card for that load. (See paragraph 3-3, above, for contents of the type 1 card.)

c. The third and (not illustrated) subsequent lines depict the type 2 card(s) in the input. (See paragraph 3-4, above, for contents of type 2 cards.)

AIR MOVEMENT PLANNING SYSTEM    U.S. ARMY LOGISTICS CENTER, FORT LEE, VIRGINIA    DATE 09/29/78    TIME 09:53:34    PAGE 131  
 \* \* \* \* \*    SAMPLE RUN FOR USERS MANUAL    \* \* \* \* \*

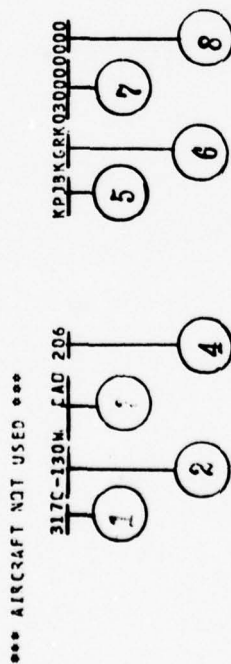


Figure 4-18. Aircraft not used.



8/08/17 AMPS HELICOPTER TYPE LOAD CARD TRANSACTIONS LISTING

8/08/17

.....1.....2.....3.....4.....5.....6.....7.....8

1241100100300005298016932000419012

2 110010 110419072511095912651115011807

.....1.....2.....3.....4.....5.....6.....7.....8

1241100200230204389816932000419012

2 110020 1104190725130980115413103013801115011807

.....1.....2.....3.....4.....5.....6.....7.....8

Figure 4-19. HELI-MAINT transactions listing.

d. Following the lines showing the input cards, and beginning in column 36, messages will be printed to flag any errors detected by the edit routine of HELI-MAINT. Any such message means that the entire load was rejected, and the input must be corrected and resubmitted. The following messages may be encountered:

(1) "Number of cards in this set not = number of cards given on type 1 card."

(2) "Number of helicopters given exceeds 16."

(3) "Sequence number of first card in this set not = 1."

(4) "Sequence number of second card in this set not = 2."

(5) "Sequence number of third card in this set not = 3."

(6) "Sequence number of fourth card in this set not = 4."

(7) "Number of helicopters given on type 1 card does not = number of helicopters described."

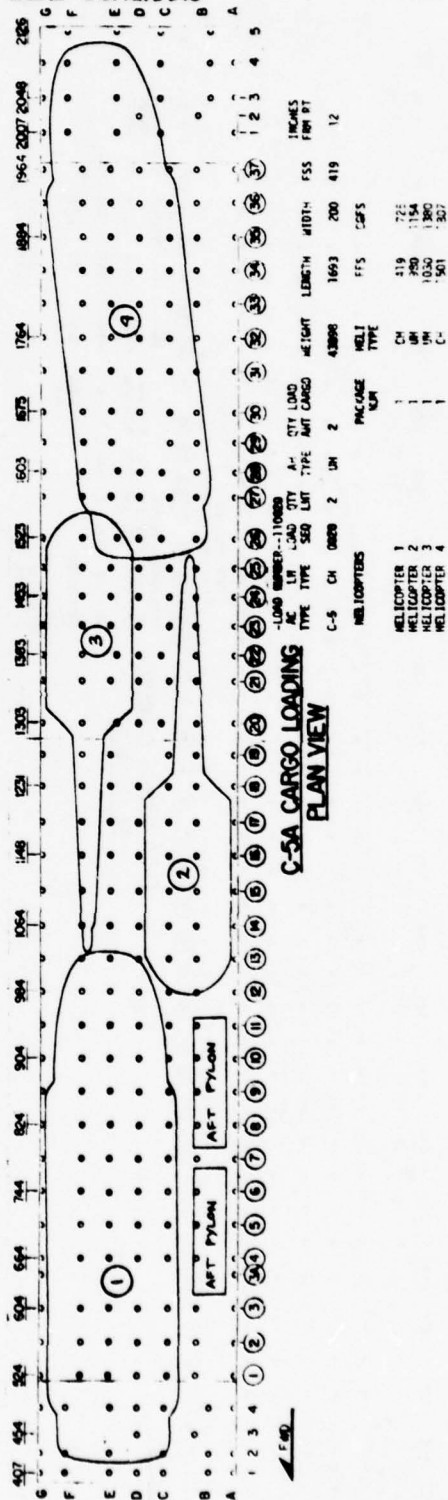
4-18. LOAD LIST. Figure 4-20 illustrates the information given in the load list for the same two loads shown in Figure 4-19, with the data arranged under column headings for greater readability. (For a better understanding of the source and application of these data, compare Figure 4-20 with the diagrams of these loads, which are the first two loads shown in Appendix A.)

a. The first set of column headings and the line of data following pertain to the data in the type 1 input card for this load. Control entries, such as card sequence numbers and action codes, have been omitted. Note that the "load number" is divided into its three components: aircraft type, large helicopter type, and sequence number. Thus, the input entry for load number 110010 is shown in this format as "C-5," for the first digit (aircraft type); "CH," for the second digit (large helicopter type); and "0010," the sequence number.

b. The second set of column headings and the lines of data following pertain to individual helicopter data entered in type 2 cards for this load. Again, control entries are omitted.

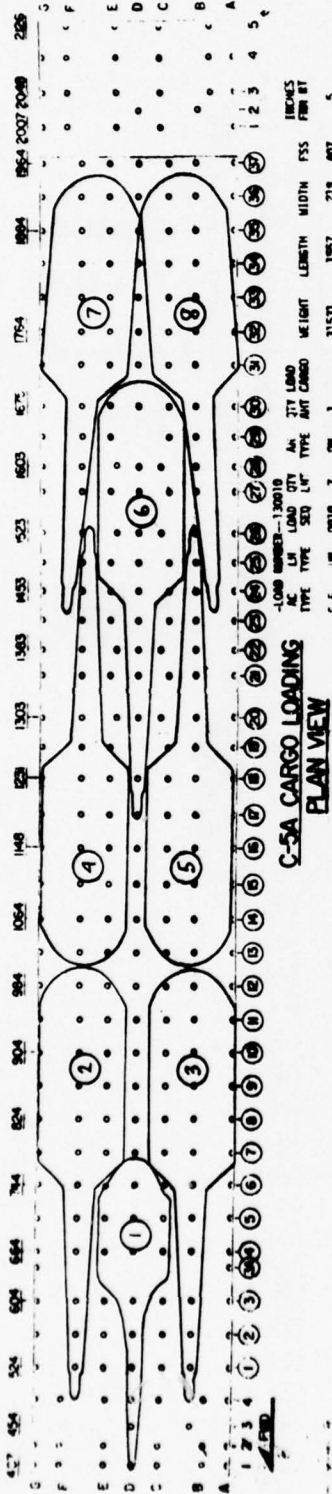
Figure 4-20. HELI-FILE load list.

## STANDARD HELICOPTER LOAD DIAGRAMS







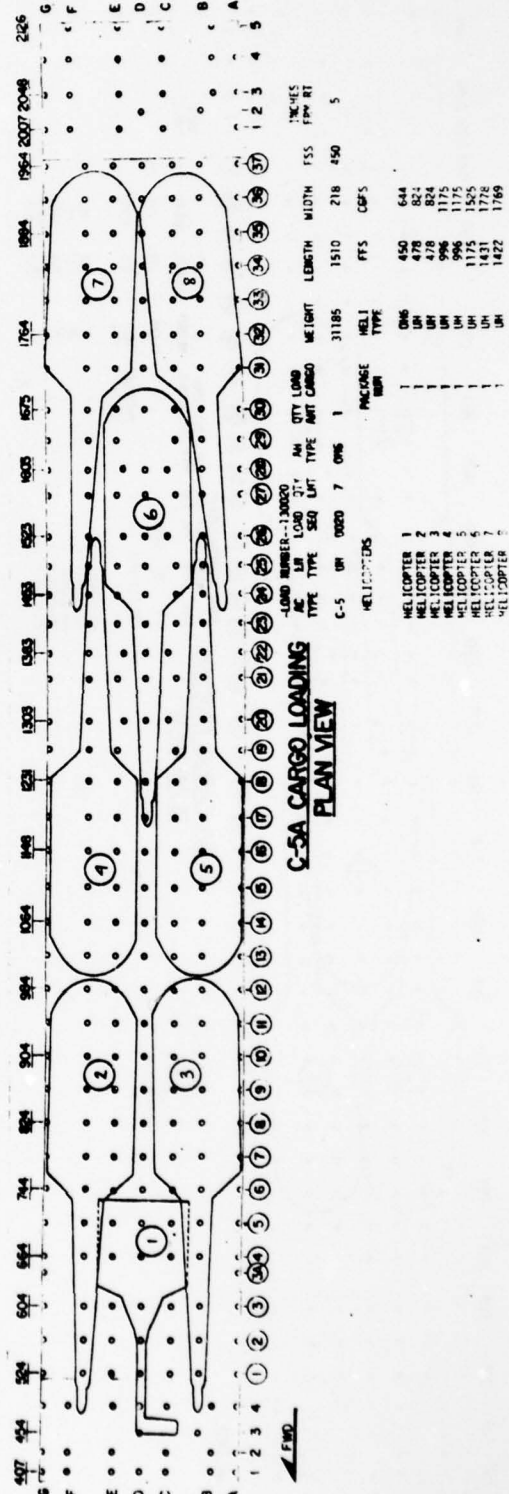


LOAD NUMBER--130010

AC	LT	LOAD	TYPE	SEQ	LT	WT	MT	CD	MT	CD	MT	CD
C-5	UH	0010	7	01	1	31531	1957	218	407	5		

HELICOPTERS

HELICOPTER	TYPE	WT	MT	CD	MT	CD	MT	CD
1	UH	407	670					
2	UH	478	824					
3	UH	478	824					
4	UH	996	1175					
5	UH	996	1175					
6	UH	1175	1525					
7	UH	1175	1525					
8	UH	1422	1778					

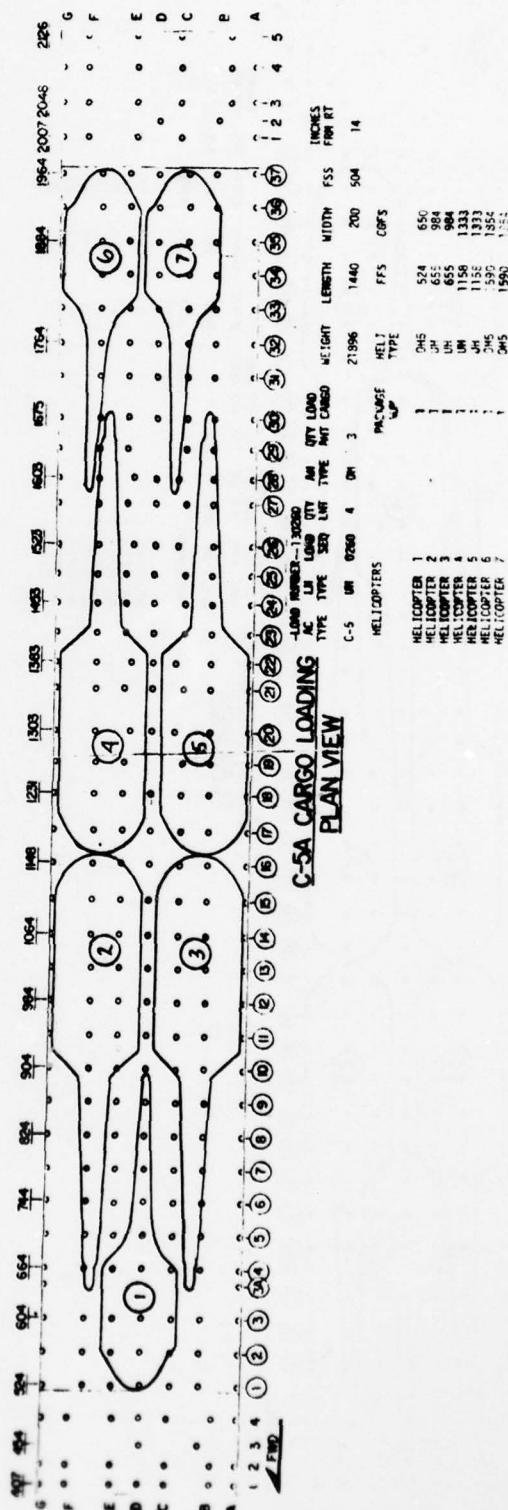
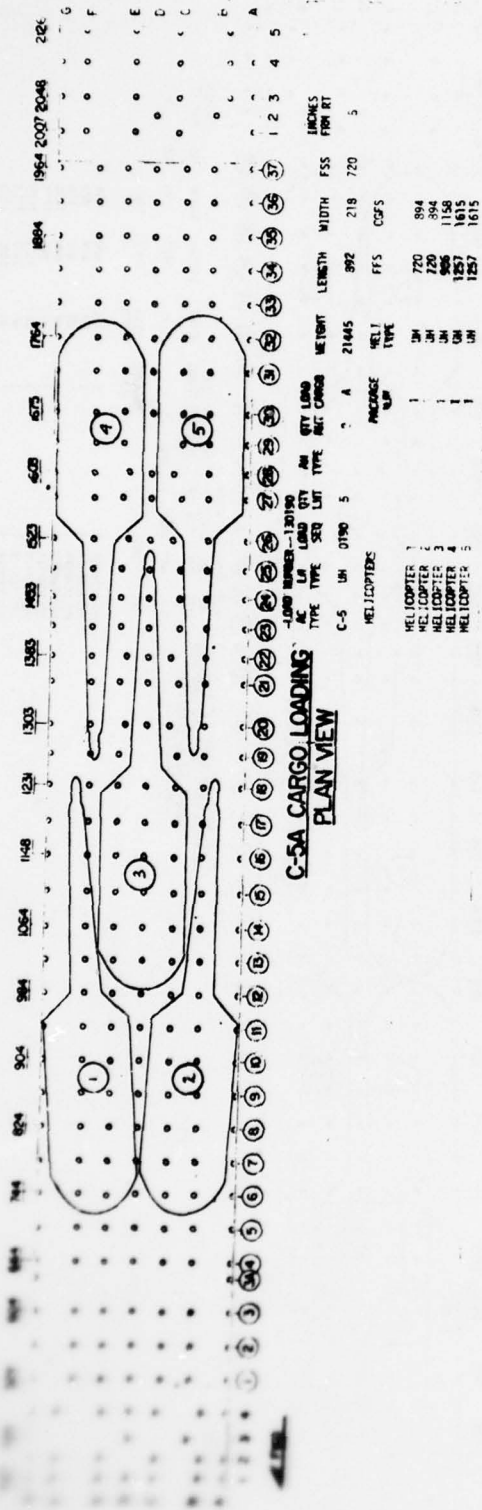


LOAD NUMBER--130020

AC	LT	LOAD	TYPE	SEQ	LT	WT	MT	CD	MT	CD	MT	CD
C-5	UH	0020	7	01	1	31185	1510	218	450	5		

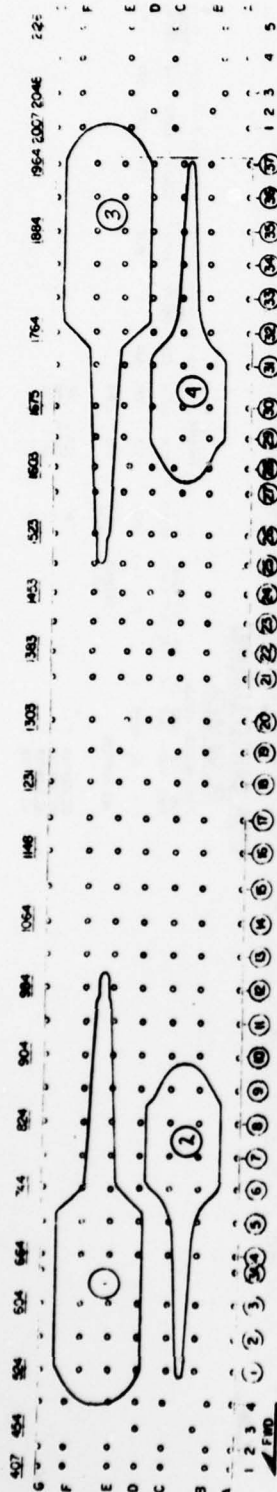
HELICOPTERS

HELICOPTER	TYPE	WT	MT	CD	MT	CD	MT	CD
1	UH	450	644					
2	UH	478	824					
3	UH	478	824					
4	UH	996	1175					
5	UH	996	1175					
6	UH	1175	1525					
7	UH	1175	1525					
8	UH	1422	1778					



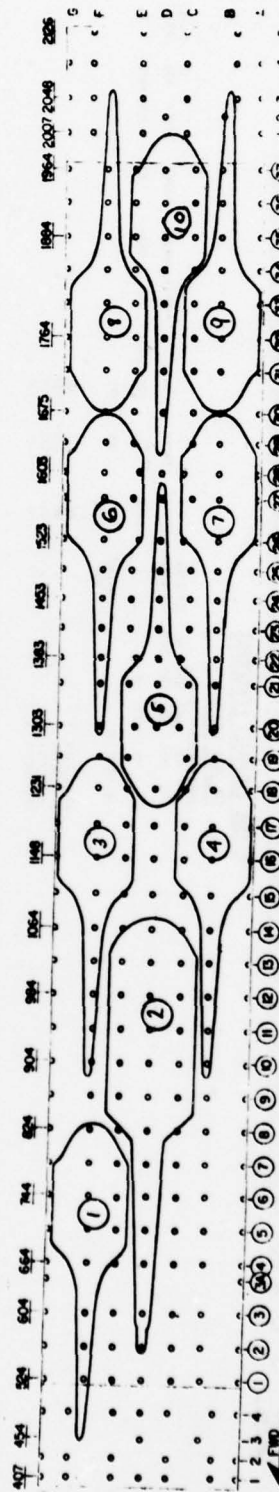






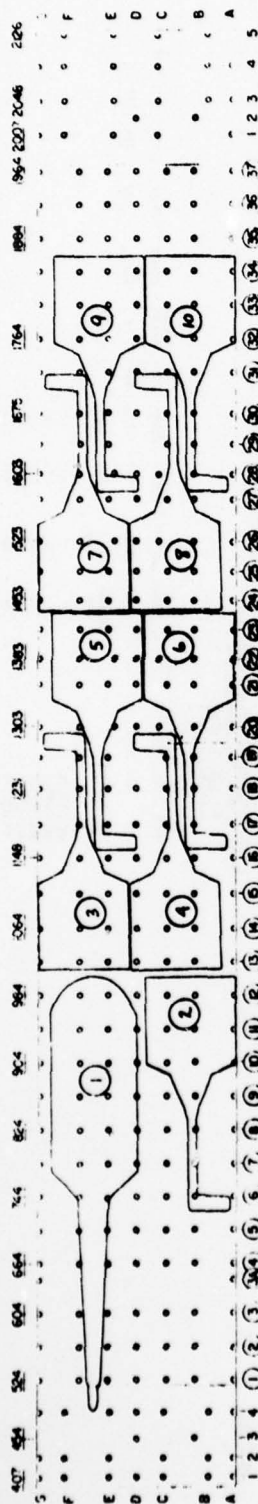
### C-5A CARGO LOADING PLAN VIEW

LOAD NUMBER-11949									
AC	LN	LOAD	QTY	TYPE	WT	HT	WID	LEN	FFS
C-5	UN	0750	2	QM	2	575	512	170	594
HELICOPTERS									
HELICOPTER 1									
HELICOPTER 2									
HELICOPTER 3									
HELICOPTER 4									



### C-5A CARGO LOADING PLAN VIEW

LOAD NUMBER-11949									
AC	LN	LOAD	QTY	TYPE	WT	HT	WID	LEN	FFS
C-5	UN	0750	2	QM	2	575	512	170	594
HELICOPTERS									
HELICOPTER 1									
HELICOPTER 2									
HELICOPTER 3									
HELICOPTER 4									
HELICOPTER 5									
HELICOPTER 6									
HELICOPTER 7									
HELICOPTER 8									
HELICOPTER 9									
HELICOPTER 10									



**C-5A CARGO LOADING  
PLAN VIEW**

INCHES  
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FFS CFS

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FFS CFS

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HELICOPTERS  
C-5 UN 0910 1 346 9  
AC UN 0910 1 346 9  
TYPE SEQ LIT TYPE AMT CARGO

HELICOPTER 1  
HELICOPTER 2  
HELICOPTER 3  
HELICOPTER 4  
HELICOPTER 5  
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HELICOPTER 7  
HELICOPTER 8  
HELICOPTER 9  
HELICOPTER 10

ONE 494  
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ONE 574  
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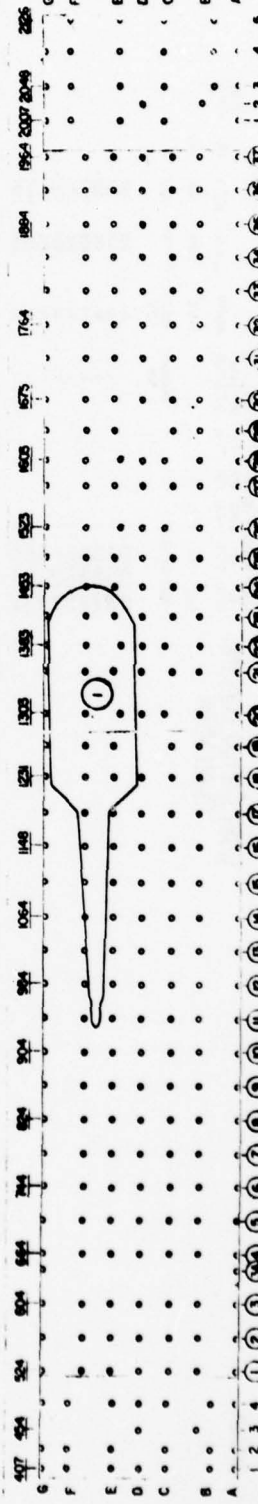
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**C-5A CARGO LOADING  
PLAN VIEW**

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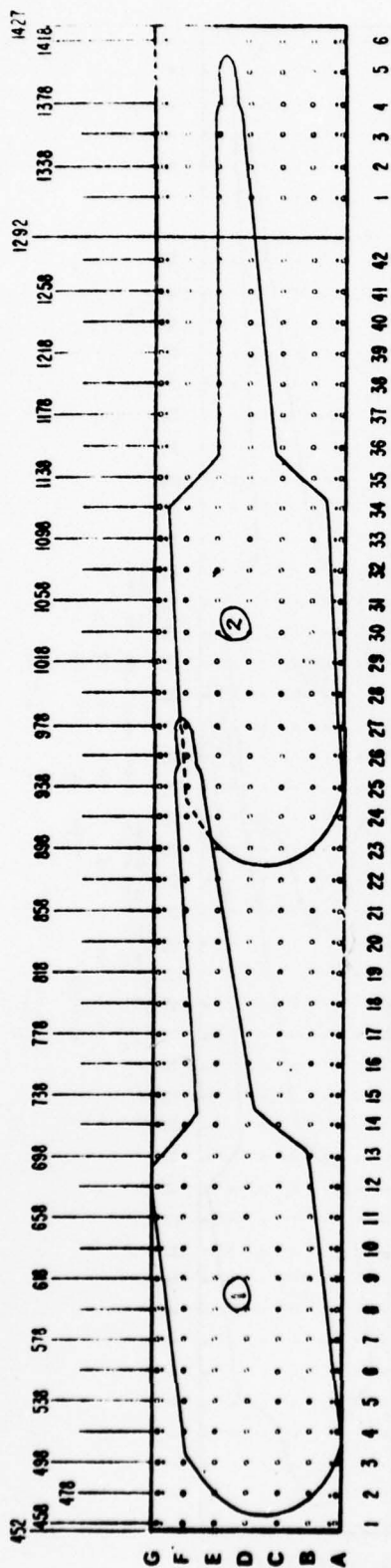
FFS CFS











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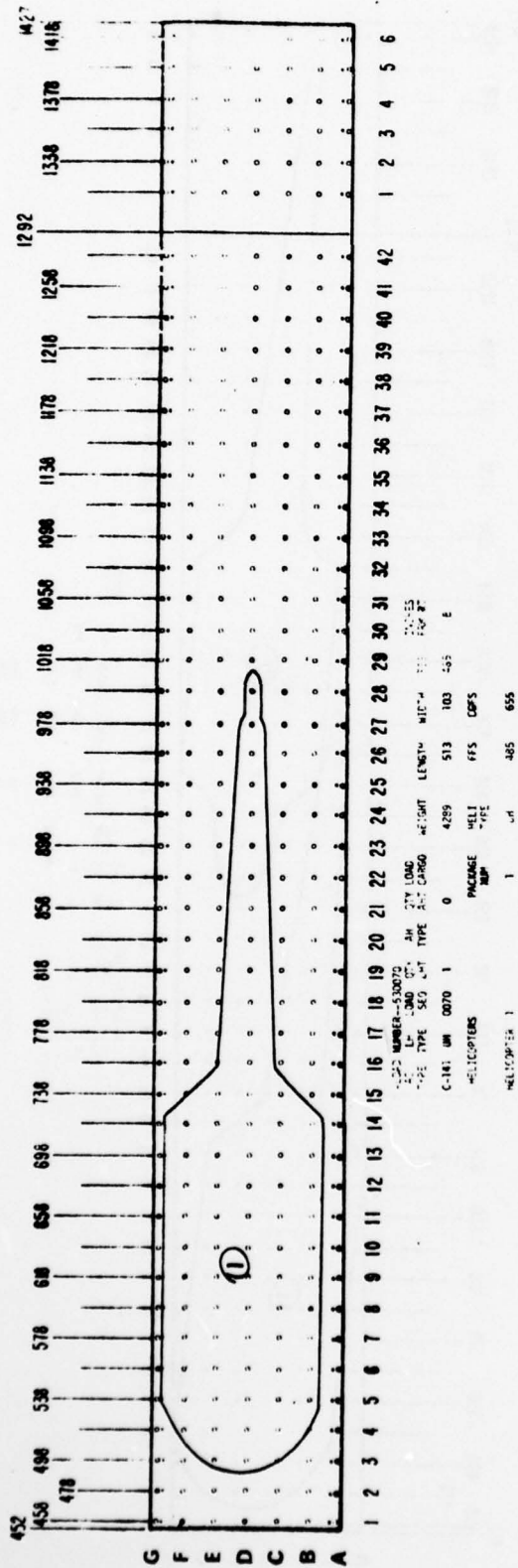
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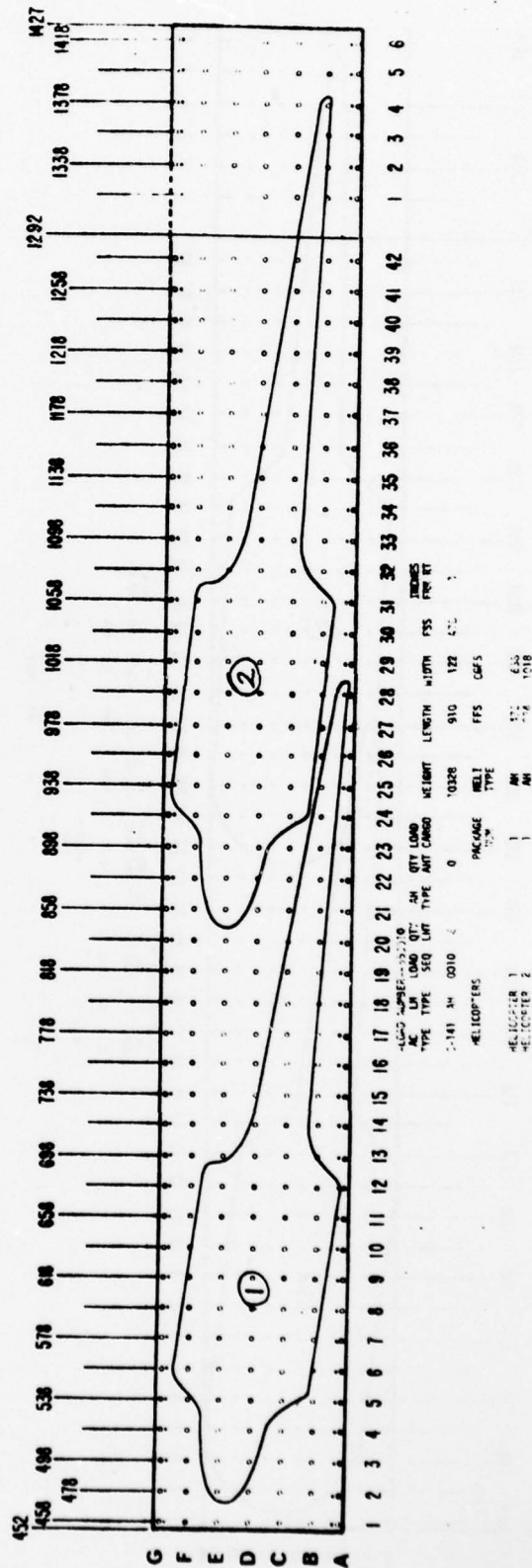
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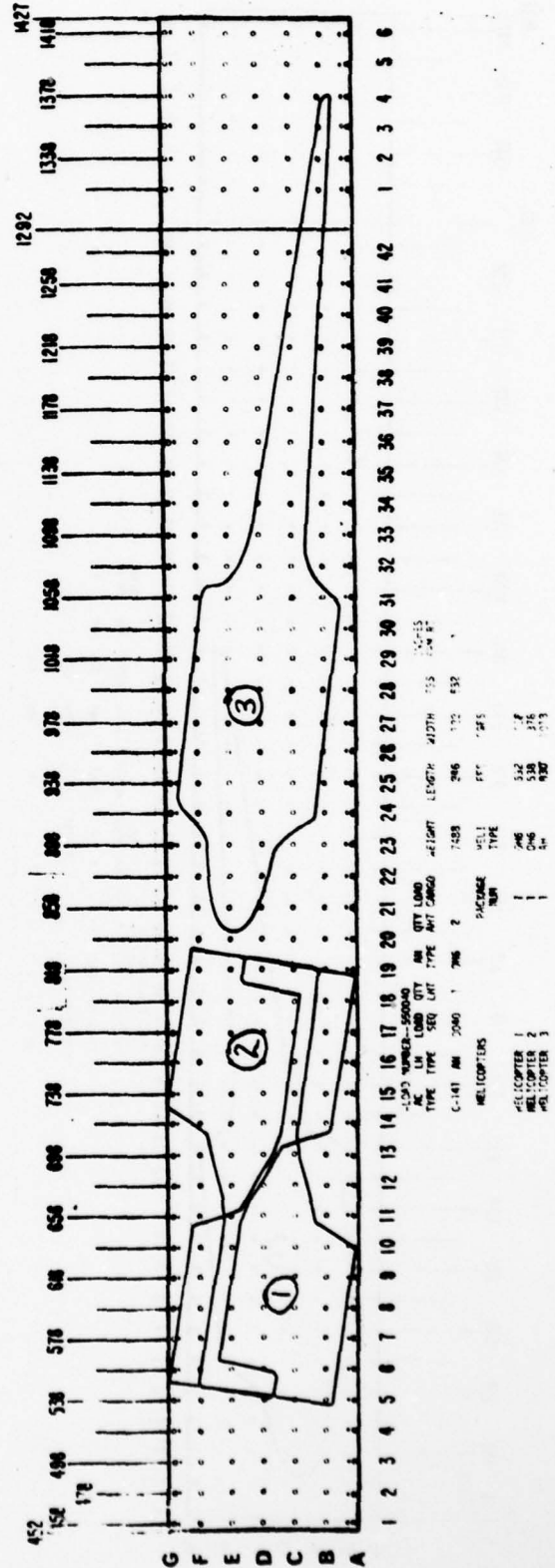
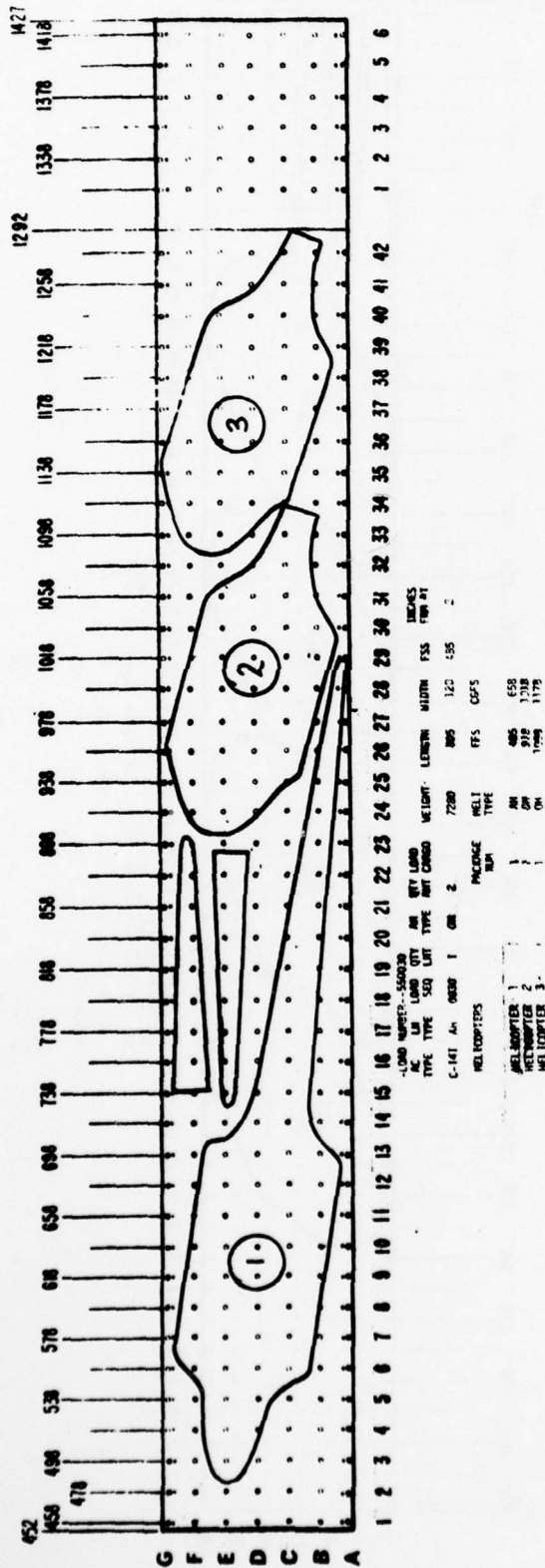
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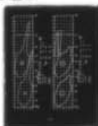
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## APPENDIX B

### INDEX TO STANDARD HELICOPTER LOAD NUMBERS

B-1. PURPOSE. AMPS helicopter loading routines search the HELI-FILE sequentially, within the group of loads for the aircraft type being loaded. The first load found that is matched by data in the cargo file is selected and printed. The loads in the HELI-FILE, therefore, must be in sequence of load efficiency. Numbering loads as indicated in this appendix will insure that efficiency.

B-2. LOAD NUMBERING SYSTEM. The six-digit load number provides the index for selection by the AMPS program, and it summarizes the critical information about the load.

a. The first digit indicates the type of USAF transport aircraft for which the load is designed.

(1) 1 means a C-5.

(2) 5 means a C-141.

(3) 8 means a C-130.

Therefore, when the AMPS program is loading a C-141, it bypasses all loads with a "1" in first digit. Also, this numbering allows inclusion of future aircraft types, or modifications, without renumbering all current loads.

b. The second digit indicates the larger, or only, type of helicopter (LHT) in the load.

(1) 1 means a CH-47 series.

(2) 3 means a UH series.

(3) 5 means an AH series.

(4) 7 means an OH-58.

(5) 9 means an OH-6.

c. The next three digits provide a sequence number within each aircraft/LHT group, and the last digit is used as a decimal, to enable insertion of additional loads, if desired. For example, the first two loads in the index are numbered 110010 and 110020; 110011-110019 are available for inserting new loads.

B-3. USING THE INDEX.

a. Paragraph B-4 below, lists loads for C-5 aircraft; paragraph B-5 for C-141, and paragraph B-6 for C-130. Subparagraphs group loads by the type helicopter that is the larger, or only, type in the load (LHT).

b. Helicopter types are identified by their "cargo code" designators (see paragraph 2-11d, basic publication).

c. To locate the number to be used for a new load, find the paragraph for the aircraft being loaded, then the subparagraph for the LHT, then read down the left of the column for the correct quantity of LHT, then the next column for the correct additional helicopter type (AHT), and finally, the correct quantity of AHT. For example, a new load is to include 2 OH-6 helicopters and 1 UH helicopter and is to be loaded into a C-141 aircraft:

(1) Turn to paragraph B-5 for C-141.

(2) Find the subparagraph listing loads in which UH is the LHT (subparagraph a).

(3) Within the loads that indicate 1 UH (QTY LHT = 1), find a load in which the additional helicopter type (AHT) is "06" and the quantity for AHT is 2, load number 530040. Assignment of number 530040 to the new load will place it in proper sequence in the HELI-FILE.

B-4. LOADS IN C-5 AIRCRAFT.

a. Larger (or only) helicopter type (LHT) is CH.

<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>	<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
3	0 0	110010	1	06 8	110230
2	UH 2	110020	1	UH 2	110240
2	AH 2	110030	1	AH 4	110250
2	06 5	110040	1	05 7	110260
2	05 4	110050	1	06 7	110270
2	UH 1	110060	1	UH 1	110280
2	AH 1	110070	1	AH 3	110290
2	06 4	110080	1	05 6	110300
2	05 3	110090	1	06 6	110310
2	06 3	110100	1	05 5	110320
2	05 2	110110	1	06 5	110330
2	06 2	110120	1	AH 2	110340
2	05 1	110130	1	05 4	110350
2	06 1	110140	1	06 4	110360
2	0 0	110150	1	05 3	110370
1	UH 4	110160	1	06 3	110380
1	AH 6	110170	1	AH 1	110390
1	06 10	110180	1	05 2	110400
1	UH 3	110190	1	06 2	110410
1	AH 5	110200	1	05 1	110420
1	06 9	110210	1	06 1	110430
1	05 8	110220	1	0 0	110440

b. LHT is UH.

<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>	<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
7	05 1	130010	6	0 0	130090
7	06 1	130020	5	AH 2	130100
7	0 0	130030	5	06 4	130110
6	05 2	130040	5	05 3	130120
6	06 2	130050	5	06 3	130130
6	AH 1	130060	5	05 2	130140
6	05 1	130070	5	AH 1	130150
6	06 1	130080	5	06 2	130160

<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>	<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
5	05 1	130170	2	05 8	130620
5	06 1	130180	2	AH 3	130630
5	0 0	130190	2	05 7	130640
4	AH 3	130200	6	06 7	130650
4	05 6	130210	2	05 6	130660
4	05 5	130215	2	06 6	130670
4	06 5	130220	2	05 5	130680
4	05 4	130230	2	AH 2	130690
4	AH 2	130240	2	05 4	130700
4	06 4	130250	2	06 5	130710
4	05 3	130260	2	06 4	130720
4	06 3	130270	2	05 3	130730
4	05 2	130280	2	06 3	130740
4	AH 1	130290	2	05 2	130750
4	05 1	130300	2	AH 1	130760
4	06 2	130310	2	06 2	130770
5	06 1	130320	2	05 1	130780
4	0 0	130330	2	06 1	130790
3	AH 4	130340	2	0 0	130800
3	OH 9	130350	1	AH 6	130810
3	06 8	130360	1	06 13	130820
3	05 7	130370	1	06 12	130830
3	AH 3	130380	1	AH 5	130840
3	06 7	130390	1	05 11	130850
3	05 6	130400	1	06 11	130860
3	06 6	130410	1	05 10	130870
3	05 5	130420	1	06 10	130880
3	AH 2	130430	1	AH 4	130890
3	06 5	130440	1	05 9	130900
3	05 4	130450	1	06 9	130910
3	06 4	130460	1	05 8	130920
3	05 3	130470	1	06 8	130930
3	06 3	130480	1	05 7	130940
3	AH 1	130490	1	06 7	130950
3	05 2	130500	1	AH 3	130960
3	06 2	130510	1	05 6	130970
3	05 1	130520	1	06 6	130980
3	06 1	130530	1	05 5	130990
3	0 0	130540	1	06 5	131000
2	AH 5	130550	1	05 4	131010
2	06 11	130560	1	AH 2	131020
2	06 10	130570	1	06 4	131030
2	AH 4	130580	1	05 3	131040
2	05 9	130590	1	06 3	131050
2	06 9	130600	1	AH 1	131060
2	06 8	130610	1	05 2	131070



<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
1	06 2	131080
1	05 1	131090
1	06 1	131100
1	0 0	131110

c. LHT is AH.

<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
12	0 0	150010
11	05 1	150020
11	06 1	150030
11	0 0	150040
10	05 2	150050
10	06 2	150060
10	05 1	150070
10	06 1	150080
10	0 0	150090
9	06 4	150100
9	05 3	150110
9	06 3	150120
9	05 2	150130
9	06 2	150140
9	05 1	150150
9	06 1	150160
9	0 0	150170
8	06 5	150180
8	06 4	150190
8	06 4	150200
8	05 3	150210
8	06 3	150220
8	05 2	150230
8	06 2	150240
8	05 1	150250
8	06 1	150260
8	0 0	150270
7	06 6	150280
7	05 5	150290
7	06 5	150300
7	05 4	150310
7	06 4	150320
7	05 3	150330
7	06 3	150340
7	05 2	150350

<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
7	06 2	150360
7	05 1	150370
7	06 1	150380
7	0 0	150390
6	06 8	150400
6	06 7	150410
6	05 6	150420
6	06 6	150430
6	05 5	150440
6	06 5	150450
6	05 4	150460
6	06 4	150470
6	05 3	150480
6	06 3	150490
6	05 2	150500
6	06 2	150510
6	05 1	150520
6	06 1	150530
6	0 0	150540
5	06 9	150550
5	06 8	150560
5	05 7	150570
5	06 7	150580
5	05 6	150590
5	06 6	150600
5	05 5	150610
5	06 5	150620
5	05 4	150630
5	06 4	150640
5	05 3	150650
5	06 3	150660
5	05 2	150670
5	06 2	150680
5	05 1	150690
5	06 1	150700
5	0 0	150710
4	06 10	150720
4	06 9	150730
4	05 8	150740
4	06 8	150750
4	05 7	150760
4	06 7	150770
4	05 6	150780
4	06 6	150790
4	05 5	150800

<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>	<u>LHT</u> <u>Qty</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
4	06 5	150810	2	06 7	151210
4	05 4	150820	2	05 6	151220
4	06 4	150830	2	06 6	151230
4	05 3	150840	2	05 5	151240
4	06 3	150850	2	06 5	151250
4	05 2	150860	2	05 4	151260
4	06 2	150870	2	06 4	151270
4	05 1	150880	2	05 3	151280
4	06 1	150890	2	06 3	151290
4	0 0	150900	2	05 2	151300
3	06 11	150910	2	06 2	151310
3	06 10	150920	2	05 1	151320
3	05 9	150930	2	06 1	151330
3	06 9	150940	2	0 0	151340
3	05 8	150950	1	06 13	151350
3	06 8	150960	1	06 12	151360
3	05 7	150970	1	05 11	151370
3	06 7	150980	1	06 11	151380
3	05 6	150990	1	05 10	151390
3	06 6	151000	1	06 10	151400
3	05 5	151010	1	05 9	151410
3	06 5	151020	1	06 9	151420
3	05 4	151030	1	05 8	151430
3	06 4	151040	1	06 8	151440
3	05 3	151050	1	05 7	151450
3	06 3	151060	1	06 7	151460
3	05 2	151070	1	05 6	151470
3	06 2	151080	1	06 6	151480
3	05 1	151090	1	05 5	151490
3	06 1	151100	1	06 5	151500
3	0 0	151110	1	05 4	151510
2	06 12	151120	1	06 4	151520
2	06 11	151130	1	05 3	151530
2	05 10	151140	1	06 3	151540
2	06 10	151150	1	05 2	151550
2	05 9	151160	1	06 2	151560
2	06 9	151170	1	05 1	151570
2	05 8	151180	1	06 1	151580
2	06 8	151190	1	0 0	151590
2	05 7	151200			

d. LHT is 05; additional helicopter type (AHT) is 06.

<u>Qty</u> <u>LHT</u>	<u>Qty</u> <u>AHT</u>	<u>Load</u> <u>Number</u>	<u>Qty</u> <u>LHT</u>	<u>Qty</u> <u>AHT</u>	<u>Load</u> <u>Number</u>
12	0	170010	5	2	170410
11	1	170020	5	1	170420
11	0	170030	5	0	170430
10	2	170040	4	10	170440
10	1	170050	4	9	170450
10	0	170060	4	8	170460
9	4	170070	4	7	170470
9	3	170080	4	6	170480
9	2	170090	4	5	170490
9	1	170100	4	4	170500
9	0	170110	4	3	170510
8	5	170120	4	2	170520
8	4	170130	4	1	170530
8	3	170140	4	0	170540
8	2	170150	3	12	170550
8	1	170160	3	11	170560
8	0	170170	3	10	170570
7	6	170180	3	9	170580
7	5	170190	3	8	170590
7	4	170200	3	7	170600
7	3	170210	3	6	170610
7	2	170220	3	5	170620
7	1	170230	3	4	170630
7	0	170240	3	3	170640
6	8	170250	3	2	170650
6	7	170260	3	1	170660
6	6	170270	3	0	170670
6	5	170280	2	13	170680
6	4	170290	2	12	170690
6	3	170300	2	11	170700
6	2	170310	2	10	170710
6	1	170320	2	9	170720
6	0	170330	2	8	170730
5	9	170340	2	7	170740
5	8	170350	2	6	170750
5	7	170360	2	5	170760
5	6	170370	2	4	170770
5	5	170380	2	3	170780
5	4	170390	2	2	170790
5	3	170400	2	1	170800

<u>Qty</u> <u>LHT</u>	<u>Qty</u> <u>AHT</u>	<u>Load</u> <u>Number</u>
2	0	170810
1	13	170820
1	12	170830
1	11	170840
1	10	170850
1	9	170860
1	8	170870
1	7	170880
1	6	170890
1	5	170900
1	4	170910
1	3	170920
1	2	170930
1	1	170940
1	0	170950

e. 06 helicopters only.

<u>Qty</u>	<u>Load</u> <u>Number</u>
16	190010
15	190020
14	190030
13	190040
12	190050
11	190060
10	190070
9	190080
8	190090
7	190100
6	190110
5	190120
4	190130
3	190140
2	190150
1	190160



B-5. LOADS IN C-141 AIRCRAFT.

a. LHT is UH.

<u>Qty</u> <u>LHT</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>	<u>Qty</u> <u>LHT</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
2	0 0	530010	1	05 1	530050
1	AH 1	530020	1	06 1	530060
1	05 2	530030	1	0 0	530070
1	06 2	530040			

b. LHT is AH.

<u>Qty</u> <u>LHT</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>	<u>Qty</u> <u>LHT</u>	<u>Add'l Hcptr</u> <u>Type/Qty</u>	<u>Load</u> <u>Number</u>
2	0 0	550010	1	05 1	550050
1	06 3	550020	1	06 1	550060
1	05 2	550030	1	0 0	550070
1	06 2	550040			

c. LHT is 05; AHT is 06.

<u>Qty</u> <u>LHT</u>	<u>Qty</u> <u>AHT</u>	<u>Load</u> <u>Number</u>	<u>Qty</u> <u>LHT</u>	<u>Qty</u> <u>AHT</u>	<u>Load</u> <u>Number</u>
4	0	570010	2	0	570070
3	1	570020	1	3	570080
3	0	570030	1	2	570090
2	3	570040	1	1	570100
2	2	570050	1	0	570110
2	1	570060			

d. 06 Only.

<u>Qty</u>	<u>Load</u> <u>Number</u>
5	590010
4	590020
3	590030
2	590040
1	590050

B-6. LOADS IN C-130 AIRCRAFT.

<u>Load Number</u>	<u>Quantity</u>			
	UH	AH	05	06
830010	1			
850010		1		
870010			2	
870020			1	1
870030			1	
890010				3
890020				2
890030				1

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13. ABSTRACT The Air Movement Planning System (AMPS) is a computerized method for quickly and effectively planning cargo loads for C-130, C-141, and C-5 aircraft. It is primarily intended for use in Army unit moves, but its inherent flexibility makes it adaptable for movement of the most types of cargo under various conditions. AMPS provides the user with an air movement mission and automated method of preparing effective load plans for USAF aircraft that will provide a timely response within the dynamic environment of joint airlift operations. The system is fast, accurate, makes efficient use of aircraft, incorporates commander's priorities, maintains unit integrity, links trailers and/or crews with their respective vehicles, and links units with specific aircraft.			

DD FORM 1473

REPLACES DD FORM 1473, 1 JAN 64, WHICH IS OBSOLETE FOR ARMY USE.

Security Classification

Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Air Movement Planning System						
Model						
Simulation						
Transportation						
Aircraft						
Airlift						
AMPS						
C-130						
C-141						
C-5						
C-5a						
Cargo Loads						
Air Movement of Helicopters						
Air Movement Planning, Automated						
Planning System						
Helicopters						
Helicopter Movement						